ALASKA PETROLEUM
ENVIRONMENTAL
ENGINEERING

PRELIMINARY ENDANGERMENT ASSESSMENT

Atlas Radiator, Inc.
10110 S. Norwalk Blvd.
Santa Fe Springs, CA

ALASKA PETROLEUM
ENVIRONMENTAL
ENGINEERING

April 19, 1995

Via Hand Delivery

State of California,
California Environmental Protection Agency,
Department of Toxic Substance Control,
Site Mitigation Branch
245 W. Broadway, Suite 425
Long Beach, CA 90802-4444

Attn: Mr. Haissam Y. Salloum

Re: 10110 S. Norwalk Boulevard
Santa Fe Springs, CA

Dear Mr. Salloum:

Presented herewith is: (1) the Preliminary Endangerment Assessment (PEA) report for the referent site, (2) and a cashier's check for $ 8,175.00 for the PEA oversight deposit. On behalf of Mr. Donald Miller, *Alaska Petroleum Environmental Engineering, Inc.* is submitting this PEA as part of the "Voluntary Site Cleanups, Walk-In Program".

A "no further action" determination is recommended as no significant levels of contamination are present. The concentration of the on-site contaminant, lead, is less than that allowed by the health-based preliminary remedial goals developed by the DTSC for industrial/commercial sites.

The on-site construction activities are being delayed due to this review; Mr. Miller is presently paying interest on a construction loan without being able to build. Therefore, we respectfully request, based upon the information presented herein, that construction activities be continued prior to receipt of a formal reply.

If you have any questions or require any additional information regarding the contents of the PEA report, please do not hesitate to contact us.

Cordially,

R. Glenn Stillman
Principal Engineer
RGS/mib
enc

cc: Donald G. Miller/Eddie Cerda - Atlas Radiator, Inc.
Fred Cartozian - First State Bank of Southern California

400334\trans.ltr

Alaska Office
907•479-9555
P.O. Box 81904
Fairbanks, Alaska 99708

California Office
310•433-5144
FAX 310•433-6998
P.O. Box 14766
Long Beach, California 90803

Atlas Radiator, Inc.
10110 S. Norwalk Blvd., Santa Fe Springs, CA

PRELIMINARY ENDANGERMENT ASSESSMENT

April 1995

Prepared For:

Mr. Donald G. Miller
c/o Atlas Radiator, Inc.
10110 S. Norwalk Blvd.
Santa Fe Springs, CA 90670

Prepared By:
Alaska Petroleum Environmental Engineering, Inc.
295 Redondo Avenue, Suite 202
Post Office Box 14766
Long Beach, CA 90803

Table of Contents

Table of Contents, cont

EXECUTIVE SUMMARY

The purpose for providing this Preliminary Endangerment Assessment (PEA) report is to establish remedial goals and to certify that the site has no impact on the public health and the environment. The intent is to demonstrate that the guidelines established and utilized by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) for the assessment of health risks associated with inorganic lead can be followed, and are acceptable for this site. The DTSC - Sacramento has determined that the health-based preliminary remedial goal (PRG) or clean-up criteria of less than 1,000 parts per million (ppm) of total lead is acceptable for commercial/industrial usage properties.

One on-site building was present from the 1920's to 1994. From the 1920's to 1945, it was used for oil field support services (e.g., parts storage, repair of downhole oil production pumps, etc.). Mr. Don Miller purchased the property in 1945 and leased it to B&D Oil Tool from 1945 to 1968, the lessee at the time of purchase. In 1973 Mr. Miller moved his business, Atlas Radiator, to the site and adjacent parcel. At this time he commenced using the site building for air conditioning parts storage and office space. In 1994, the building was demolished in preparation for the construction of a new building.

Prior to the current redevelopment activities several environmental studies were conducted. The results indicated the potential and confirmed presence of heavy metals and total petroleum hydrocarbons. However, none of the heavy metal results were above the California Code of Regulations, Title 22, Article 11, § 66261.24, Table II, Total Threshold Limit Concentrations. Composite lead concentrations detected are as high as 389 parts per million (ppm) with an average concentration of approximately 90 ppm.

The primary exposure pathways are inhalation and ingestion from the airborne transmission of lead. The exposed population, if any, will be limited to those constructing the new on-site building and the immediately adjacent Atlas Radiator employees. To mitigate potential exposure, the lead-impacted soil will be capped by the proposed building; the remainder of the site will be covered with asphalt and used as a parking lot.

The goal of the PEA screening analysis is to "insure that no potential health hazard is overlooked". The release does not pose an immediate potential hazard to the public health or the environment. The State developed health-based PRG for residential site usage is approximately 200 ppm. There is no wildlife or plant life present on the property. The property does not contain any water bodies nor is there any in close proximity; the nearest groundwater is approximately 60 feet below ground surface, and has been impacted by oil field activities in the surrounding area. Therefore, there is no immediate threat to the public health and environment.

The levels of lead detected on-site are below the PRG limits as determined utilizing the DTSC, Lead Risk Assessment Spreadsheet. This analysis supports the industrial/commercial limit of 1,000 ppm of total lead. Based upon the results of the PEA study, the project proponent is requesting that a "no further action" or site closure determination be made for the low concentration, lead-impacted soil that was encountered during the site redevelopment activities.

1.0 INTRODUCTION

The subject property (hereafter referred to as the "PEA site") is owned by Mr. Donald Grandcourt and Birdie Ann Miller (hereafter referred to as "Miller"), and is located at 10110 S. Norwalk Boulevard, Santa Fe Springs, Los Angeles County, California. It presently consists of an undeveloped property. The on-site facility operations previously included an air conditioning supply shop, owned by Atlas Radiator, Inc. (hereafter referred to as "Atlas"). Atlas has been operating on-site since 1973, although Miller has owned the property since 1945. From 1945 through 1968 the property was leased to an oil field support services company.

1.1 *Purpose*

The purpose for providing this Preliminary Endangerment Assessment (PEA) report is to establish remedial goals and to certify that the site has no impact on the public health and the environment. The intent is to demonstrate that the guidelines established and utilized by the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) for the assessment of health risks associated with inorganic lead can be followed, and are acceptable for this site. The DTSC - Sacramento has determined that the health-based preliminary remedial goal (PRG) or clean-up criteria of less than 1,000 parts per million (ppm) of total lead is acceptable for commercial/industrial usage properties in the high desert (e.g., the communities of Rosamond, Lancaster, Mojave, etc.). Typically, "remediation" at these sites has been limited to only the capping of the impacted soil underneath the site structure or a parking lot.

1.2 *Scope of PEA Information*

The scope of this PEA follows those guidelines outlined in the following documents:

(1) DTSC, Preliminary Endangerment Assessment Guidance Manual, January 1994 [REF #1].

(2) United States Environmental Protection Agency Superfund, Volume I, Chapter 7, Human Health Evaluation Manual (Part A), Interim Final, United States Environmental Protection Agency (USEPA) (540/1-89/002), "Assessment of Health Risks From Inorganic Lead in Soil", Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities, December 1989 [REF #2].

The PEA report format presented herein tracks those items listed in Figure 3.1: Suggested Report Format, as detailed in item (1) above. The conclusions reached from this PEA are based

upon the DTSC's "Lead Risk Assessment Spreadsheet" analysis, as supported by the data compiled through the procedures outlined in item (2).

2.0 SITE DESCRIPTION

2.1 *Site Identification Information*

Identification	Information
Site Name	Atlas Radiator, Inc.
Contact Person(s)	R. Glenn Stillman - *Alaska Petroleum Environmental Engineering, Inc.* (APEE) Eddie Cerda and/or Donald G. Miller - *Atlas Radiator, Inc.* Andrew C. Lazzaretto - *City of Santa Fe Springs*
Site Address	10110 S. Norwalk Boulevard Santa Fe Springs, CA 90670
Mailing Address	10122 S. Norwalk Boulevard Santa Fe Springs, CA 90670
Phone Number	APEE (310) 433-5144, ext. 207 Atlas Radiator, Inc. (310) 944-6185 City of Santa Fe Springs (310) 868-0511, ext. 291
Other Site Names	None
USEPA Identification Number	CAD029404084
CalSites Database Number	Not Assigned
Assessor's Parcel Number and Maps	8005-15-001, Parcel Map (tentative): 24028
Township, Range, Section, and Base & Meridian	the north 264 feet of the west 330 feet of the northwest quarter of the northeast quarter of Section 6, Township 3 South, Range 11 West, San Bernardino Base & Meridian
Land Use and Zoning	Commercial/Industrial

2.2 *Site Maps*

Site Maps are presented in ***Appendix A, Site Maps and Figures.*** Included therein are the following:

Figure 1: ***Parcel Map***
Figure 2: ***Site Location Map [USGS, Whittier Quadrangle]***
Figure 3: ***Site Aerial Photograph, Dated March 20, 1988***

3.0 BACKGROUND

3.1 *Site Status and History*

3.1.1 *Business Type*

The Miller property was recently subdivided into two parcels (the PEA site and Parcel 2); it will be recorded at the County Assessors' office later this month. The business type associated with the PEA site formerly contained an "Air Conditioning Supply" building used for parts storage and office space for the facility located on Parcel 2.

Parcel 2 currently consists of Atlas' temporary office trailer and radiator repair facility. Atlas is a radiator and air conditioning repair facility. Parcel 2 is <u>not</u> included in the evaluation of this PEA.

3.1.2 *Years of Operations*

The Air Conditioning Supply building has been on the PEA site since the 1920's. From the 1920's to 1945, it was used for oil field support services (e.g., parts storage, repair of downhole oil production pumps, etc.). Miller purchased the property in 1945 and leased it to B&D Oil Tool from 1945 to 1968. In 1973, Atlas moved to its current location and commenced using the PEA site building for parts storage and office space. In 1994, the Air Conditioning Supply building was demolished in preparation for the construction of a new building.

3.1.3 *Prior Land Use*

No site history prior to 1928 was indicated in the preliminary site assessment report developed by Applied Geosciences, Inc. [REF #3]. In a 1928 historical aerial photograph, a structure was noted in the area of the Air Conditioning Supply building. According to Miller, no fill soil/material was placed on the property at any time prior to the current redevelopment activities.

3.1.4 *Facility Ownership/Operators*

ROLE	BUSINESS TYPE	ADDRESS	PHONE NUMBER
H. Maxwell Green - B&D Oil Tool *Lessee/Daily Operator*	unknown	5635 "Cerentro" Dr. Long Beach, CA	310-434-4396
Donald G. Miller - Atlas Radiator, Inc. *Facility and Property Owner/Daily Operator*	"S" Corporation	10755 Inez Street Whittier, CA	310-941-1477
Eddie Cerda - Atlas Radiator, Inc. *Facility Owner/Daily Operator*	"S" Corporation	10122 Norwalk Blvd. Santa Fe Springs, CA	310-944-6185

3.1.5 *Property Owners*

PROPERTY OWNERS	YEARS OWNED	ADDRESS	PHONE NUMBER
Bank of America, Agent for the Property Owners residing in New York State	unknown-1945	main downtown Los Angeles facility	213-622-9484
Donald Grandcourt and Birdie Ann Miller	1945-present	10755 Inez Street Whittier, CA 90605	310 941-1477

According to Miller, the previous site ownership was a private party who relocated to New York and left the Bank of America as manager of the property. The site was leased by the Bank of America to an oil field support services company until Miller purchased the property from the bank in 1945. The lessee remained on the property until 1968.

3.1.6 *Surrounding Land Use*

From review of historical aerial photographs, the surrounding land usage has primarily been oil and gas production. The PEA site is bordered to the south by Parcel 2; to the east by the Union Oil of Southern California (UNOCAL) Alexander lease, an active oil field; to the northeast by a commercial/industrial property which is currently being graded for a new building; to the north by undeveloped property which was part of the surrounding oil field and has two abandoned oil wells; to the west by S. Norwalk Boulevard beyond which is oil field property and Cascade Pumps (i.e., a commercial business).

Parcel 2 is also owned by Miller, it has three abandoned oil wells; two were reabandoned in 1994, the wells were drilled in 1922, 1928 and 1930. This property is planned to be sold later this year to Gorlitz Sewer & Drain, Inc. (a plumbing supply dealer abutting Parcel 2 to the south). In addition, there been negotiations regarding the eastern oil field property between the City of Santa Fe Springs and the UNOCAL property; the City of Santa Fe Springs is developing plans to convert the property into a public golf course.

3.2 *Hazardous Substance/Waste Management Information*

3.2.1 *Business Activities*

Since approximately 1973, the PEA site has been used for parking and parts storage for the on-going radiator repair shop operations on Parcel 2; this facility refurbishes vehicle radiators, fuel tanks and air conditioning units. The former PEA site building was used for the air conditioning supply business and heli-arc welding of aluminum diesel fuel tanks for semi-tractors/trailers. Atlas' original office was located in the western portion of the building. By the mid-1980's, the western half of the property was used by Atlas for employee/customer parking and miscellaneous storage. The eastern half of the PEA site was used by the American Disposal Company, a municipal trash transporter, for truck parking, dumpster/drum storage and for a cardboard compactor.

3.2.2 *On-Site Storage, Treatment and Disposal*

Based upon the historical operations no hazardous wastes were generated on the PEA site. The only activity on the property was parts storage, office space, employee/customer parking, air conditioning repair, and heli-arc welding of diesel fuel tanks for semi-tractors/trailers. The flux associated with the heli-arc welding is primarily an aluminum compound as is not regulated. It is currently speculated that the lead contamination on the PEA site is potentially a result of the historical radiator repair operations which were conducted by Atlas on Parcel 2.

3.2.3 *Regulatory Permits*

No permits have been issued for the PEA site.

3.2.4 *Regulatory Inspection Results*

The City of Santa Fe Springs, Fire Department conducts yearly inspections at Atlas which until last year when the PEA site building was demolished, was included. All processing equipment for the radiator repair operations are located on Parcel 2. An updated Hazardous Materials Business Plan is filed every January; no hazardous materials are identified as being stored on the PEA site.

3.2.5 *Prior Assessments/Remediations*

In 1988, a Phase I Preliminary Site Assessment (PSA) was conducted by Applied Geosciences, Inc. on both the PEA site and Parcel 2. As part of this assessment, a methane gas survey was also conducted. It included the installation of seven near-surface vapor probes to sample soil gas from depths of approximately three feet below ground surface, ***Figure 4, Methane Probe Locations -Applied Geosciences, Inc.*** The gases analyzed in the survey included: methane, two isotopes of ethane, two isotopes of propane, iso-butane, and n-butane. No anomalous results were indicated in the report for the probes installed on the either site.

Based upon the aforementioned PSA, additional limited investigation was conducted by Woodward-Clyde Consultants on Parcel 2 and a portion of the eastern adjacent UNOCAL property [REF #4]. APEE was retained in 1991 by the City of Santa Fe Springs, UNOCAL and Miller to conduct a limited site characterization study to include the PEA site.

Four trenches were advanced on the PEA site, ***Figure 5, Site Characterization Diagram - APEE.*** Trenches 4, 5, 9, and 10 were advanced in the former drum storage areas. The trenching logs and analytical results are presented in ***Appendix B, APEE Site Characterization Results.*** Hydrocarbon contamination was found in excess of 100 parts per million within the first two feet in Trenches 4, 5 and 9; lead was encountered in Trenches 5 and 9 at less than 70 ppm.

Based on APEE's study, the eastern half of Parcel 2 was determined to be impacted with crude oil. The impacted soil was remediated by UNOCAL under a Waste Discharge Permit issued by the Regional Water Quality Control Board - Los Angeles Region. APEE conducted the technical services for the bioremediation that was conducted on UNOCAL's easterly adjacent Alexander lease.

4.0 APPARENT PROBLEM

The property was classified by the City to be in "non-conforming use" because of the limited street building set-back and the oil production activities (***Figure 3***). When the City of Santa Fe Springs began widening Norwalk Boulevard, the buildings on Miller's property prohibited street improvements; all the street improvements along Norwalk Boulevard have been completed except at the Miller property. Therefore, Miller was required by the City to relocate the facility buildings. The first phase of the property's redevelopment was the construction of a new radiator repair shop on the PEA site. This was being done as to not impact the current business.

The construction lender for the redevelopment of the PEA site, First State Bank of Southern California, requested that Miller retain a qualified environmental consultant to conduct on-site sampling during the PEA site grading. This was requested in order to verify the environmental disposition of the site.

As stated previously, prior to the current redevelopment activities several environmental studies were conducted. The results indicated the potential and confirmed presence of heavy metals and total petroleum hydrocarbons. However, none of the heavy metal results were above the California Code of Regulations (CCR), Title 22, Article 11, § 66261.24, Table II, Total Threshold Limit Concentrations (TTLC).

5.0 ENVIRONMENTAL SETTING

5.1 *Factors Related to Soil Pathways*

The site elevation is approximately 145 feet above mean sea level. The site's topography is relatively flat as is the surrounding area. There is no surface slope to the site and any surficial water ponds except along S. Norwalk Boulevard where the entry access slopes onto the street. The site is enclosed by a chain link fence and/or buildings. Access is by way of a single entrance gate on S. Norwalk Boulevard.

There has been no apparent environmental impacts from the release at the PEA site. The PEA site has been historically covered with oil lease asphalt roads or gravel. Only minor hydrocarbon staining was noted at the asphalt/soil interface surrounding the concrete pad located in the northeast corner of the PEA site. The concrete pad was removed during the initial grading operations; the remainder of the site is unpaved and predominately covered with gravel.

The predominant soil groups have been defined from APEE's subsurface trenching logs, ***Appendix B***. The site is primarily underlain with about 12 inches of light brown sandy/gravelly loam, under which is medium to dark reddish-brown, moist, clayey loam with lenses of reddish

brown silt (Lakewood Formation). The surficial geology (i.e., the upper 60 inches) is technically classified as being Group II, soil of the alluvial fans, plains and terraces, of the "Perkins-Ricon association, 0 to 15 percent slopes". These soils "are well drained and have slow subsoil permeability" [United States Department of Agriculture, Soil Conservation Service, Report and General Soil Map, Los Angeles County, California, Revised December 1969].

The site is not currently paved, therefore infiltration of water is probable. However, as stated above the permeability is slow due to the clayey soil matrix. Metals are typically not soluble in water; only in acidic conditions would there be the potential for leachate migration. Current exposure routes are limited by the adherence of metals to clayey soil particles; movement by wind would be the transport mechanism.

The surrounding land use is commercial/industrial or oil production. The nearest school is approximately 0.8 miles to the northwest. There are no homes within 0.5 miles of the site (i.e., the nearest is located at the northwest corner of Artee and Smith Avenues to the west/northwest of the site).

5.2 *Factors Related to Water Pathways*

The PEA site is located in the Santa Fe Springs Plain within the Central Basin Pressure Area, part of the larger Coastal Plain of Los Angeles County. Domestic and/or commercial water supplies are generally obtained from the Lynwood and Silverado aquifer at depths of approximately 250 to 780 feet below ground surface [Los Angeles County, Department of Public Works, Flood Control District, Water Resources Division].

The release of hazardous substances to water does not exist at the site. Groundwater in the area of the PEA site is being monitored as part of the Santa Fe Springs Oil Field Reclamation project. Monitoring well MW-1 adjacent to the site is not impacted with heavy metals, however there are low concentrations of perchloroethylene (PCE), tetrachloroethylene (TCE), ethylbenzene, xylenes, toluene, and phthalates. The presence of these constituents are attributed to historical oil field production activities in Santa Fe Springs. The depth to the shallowest groundwater zone in the site vicinity is reported to be approximately 60 feet below ground surface. The groundwater gradient is to the south in this area (***Appendix C, McLaren-Hart Groundwater Data***).

5.3 *Factors Related to Air Pathways*

The potential threat of release exists only during the site grading activities when there is the possibility for fugitive dust emissions or wind dispersal. This is mitigated during grading by application of water that is primarily done for soil engineering purposes; geotechnical considerations require a soil moisture content from 10 to 15 percent for compaction.

6.0 SAMPLING ACTIVITIES AND RESULTS

6.1 *Summary of Activities*

6.1.1 *Sampling*

Based upon the above-mentioned site characterization studies, it was determined that APEE would sample the soil during the infill of the excavation in order to document the quality of the material that would underlie the building. The sampling grid locations and pad location relative thereto are depicted on ***Figure 6, Site Grading Sampling Grid - APEE.*** The location of the stockpiled soils are illustrated on ***Figure 7, Stockpile Location Diagram.***

As part of the geotechnical requirements for construction, the actual building pad and an area extending 10 feet beyond the pad's perimeter, was to be excavated to a depth of five feet. In addition, the grading contractor took into consideration the Occupational Safety and Health Administration (OSHA) regulations pertaining to trench/excavation safety (i.e., a minimum of 1:1 sidewall sloping); the overall excavation spans grid blocks "A" through "I" (i.e., north to south) and "2" through "20" (west to east). Each grid block encompasses approximately 100 square feet.

Discrete soil samples were collected from the base of the excavation at five feet, and at each foot of material infilled thereafter (i.e., at four, three, two feet, etc.); the infill samples were composited for chemical analysis. The final finish pad elevation was approximately 18 inches above the surrounding surface elevations. Soil samples were composited and analyzed for CCR, Title 22 - Metals. No more than four individual samples were composited according to the following protocols that were derived by the Alaska Department of Environmental Conservation from the USEPA Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, Field Manual, Vol. II, SW-846:

Soil Quantity	Number of Composite Samples
< 100 cubic yards (cy)	1
100 - 500 cy	3
500 - 1,000 cy	5
> 1,000 cy	9

6.1.2 *Excavations*

On October 31, 1994, the grading contractor started excavating utilizing three - Caterpillar (CAT) 623 scrapers supported by a CAT 980 rubber-tired loader, and a 2,000 gallon water truck for dust control. As with all grading projects, the fewer the number of times a pile of soil is moved the lower the overall project cost; in order to implement this, the contractor initially excavated grid blocks "F" through "I" to a depth of five feet and stockpiled this material to the south of the proposed building. They then followed this by excavating grid blocks "C" through "E" to a depth of approximately 2.5 feet and similarly stockpiled it; this was estimated to be one-half of the soil required to be excavated for the pad. The remaining grid blocks were to be excavated and placed into the initial hole; this was to be supplemented by the previously stockpiled material. The final building pad is to be about 18 inches above the surrounding property grade. Therefore, additional soil was imported from off-site sources; two sources were utilized, one from the replacement of County sewer lines at approximately one mile south of the site on Norwalk Boulevard, and the other from the University of Southern California (USC).

6.1.3 *Observations*

During the excavation, predominately in the central and northern grids blocks several items were noted: some oil field lease road material (e.g., asphaltic tank bottoms), and a limited area of crushed miscellaneous base (i.e., crushed asphalt/concrete) approximately 12 inches thick. In addition, some slightly odoriferous soil from an USC import soil load (e.g., slight hydrocarbon odor) and some finely crushed red bricks were observed at the southwest corner of the excavation.

6.1.3.1 *Oil Field Wastes*

Typical potentially contaminated material encountered on oil production sites include tank bottom material and drilling muds. Tank bottom material is an oil-water emulsion combined with free water and other foreign matter that collects in the bottom of stock and wash tanks. Periodically, tank bottoms are cleaned out by physically removing the material or by the use of chemicals (e.g. a demulsifier) which separates the oil from the water allowing both to be pumped out. When placed on roads, this material is eventually biodegradated by the endemic bacteria and weathered. As such, only the heavier, non-mobile hydrocarbon fractions (i.e. asphaltenes) remain.

Prior to the mid-1980's road oiling with tank bottoms was a common practice throughout oil fields in the Los Angeles Basin. Several cities within the Basin, such as the City of Carson until the late 1980-s still required that lease operators oil their roads for dust control; this was done by placing a surficial layer of asphaltic type material (e.g. tank bottoms) on the road surfaces.

It has been APEE's experience that if heavy metals are found, typically only arsenic, chromium or lead may be found in elevated concentrations. Arsenic was extensively used until the mid-1960's in downhole corrosion inhibitors and biocides. Corrosion inhibitors used in the 1950's through 1970's have been known to contain chromium, copper and silver. Naphthalene and benzene were found in oil de-emulsifiers. Chromium and barite were also used as drilling mud additives. Lead is contained in pipe dope which was used for lubricating pipe joints.

The tank bottoms and crushed brick that was encountered was excavated and stockpiled. This material is contained in the "unsuitable" stockpile along the eastern property boundary, ***Figure 7.***

6.2 *Presentation of Data*

Three-hundred forty five soil samples were collected and composited into 69 samples for analysis. Composite lead concentrations detected are as high as 389 ppm with an average concentration of 90 ppm. This data is presented in ***Appendix D, Tables I - IX Site Grading Analytical Data.***

6.3 *Discussion of Results*

6.3.1 *Excavation Analytical Results*

6.3.1.1 *Primary Sampling*

Based upon the aforementioned oil field practices, samples were collected from the tank bottom material and crushed bricks. The analyses specified include USEPA Methods 418.1 for Total Recoverable Petroleum Hydrocarbons (TRPH), 8015 for Total Fuel Petroleum Hydrocarbons - gasoline (TFPH), 8020 for benzene, toluene, ethylbenzene, and xylenes (BTEX), and CCR Title 22 - Metals. Once the initial Title 22 Metal results were reviewed, it was determined that all subsequent samples could be analyzed for only lead as the remaining metals constituents were well below any regulatory action limits (see below).

Table I, October 31 - November 1, 1994 Results contains the analytical data from: (1) the discrete samples collected at the base of the excavation, (2) infill composite samples, and (3) discrete samples from material of "potential environmental concern" determined by observation during the initial excavation. A total of 58 samples were collected for analysis: 45 were composited into 10 samples, 10 discrete samples were collected from the base of the excavation, and the three remaining discrete samples were taken from "anomalous" areas (i.e., the USC import and two samples from the area containing crushed bricks), ***Table IA, Off-Site Sample Results.***

All Title 22 metal "screening" samples were at concentrations what would be expected to be background concentrations except for the crushed red brick sample at 210 ppm of total lead. As stated above, based upon this result all further metal samples were thereafter only analyzed for their lead content. BTEX was at non-detectable concentrations for all samples except for the USC import sample (a discrete sample at 0.0068, 0.050 and 0.120 ppm toluene, ethylbenzene and xylenes, respectively) and Composite "E" (0.0054 ppm toluene).

Of these samples, only four exceeded the 1,000 ppm TRPH goal APEE was screening for: two were composite samples Comp "A" and "K", the third was the USC import sample, and the fourth was from the base of the excavation at grid block C5-5. Regarding the lead analysis, Composite "C" was analyzed to have 1,054 ppm of total lead which exceeds the PRG and Title 22 regulatory action limit. Since Composite sample "C" was collected from only one foot below surface grade, one foot was excavated in this area and stockpiled pending re-analysis for proper management, ***"Unsuitable" Stockpile, Figure 7.***

It was attempted to ascertain if the lead was associated with the tank bottom material or lead-contaminated soil. APEE requested that if any sample exceeded 75 ppm of total lead that it be sieved to remove the asphalt, and then both the soil and asphalt be analyzed for total lead content. Ten samples were analyzed; the analytical results are contained in ***Table II, Asphalt vs. Soil Lead Analysis***. The highest concentration of lead in the asphalt was 395 ppm for Comp "I" and for asphalt Comp "M" at 113 ppm. In addition, the three samples which exceeded the 1,000 ppm TRPH screening criteria were also re-analyzed; the results were between 1,020 and 1,230 ppm TRPH. Accordingly, the area of Comp "I" was re-excavated and stockpiled pending further testing, ***"Unsuitable" Stockpile, Figure 7.***

At this point, an attempt was made to determine if the low level lead contamination was from on-site or from an off-site source. Additionally, further characterization was made of the material that had been re-excavated and stockpiled.

(1) When a portion of the building pad was reaching its final elevation at approximately 18 inches above the surrounding elevation, areas in the proposed parking area lot were exposed; this allowed APEE personnel to collect "native" soil samples for chemical characterization.

The samples were analyzed for total lead, TRPH and BTEX; the laboratory mistakenly also analyzed the parking lot and one discrete sample for the full Title 22 - Metal series. The BTEX results were non-detectable, the lead results ranged from non-detectable to 338 ppm (averaging 110 ppm), and the highest TRPH concentration was 775 ppm, ***Table III, Parking Lot Soil Analysis***. Based upon these results, APEE determined that the low concentrations of lead were potentially from on-site.

(2) Three additional samples were collected from on-site "native" locations; in addition one on- and two off-site stockpiles were also sampled for further characterization purposes. The on-site sample locations were at the eastern property line at grid block J-26, near one of the methane vapor well probe locations at grid block J-12, and by the underground telephone junction box location at grid block M-6. The off-site locations were from two County sewer line installation soil stockpiles that were located by their excavations. The analytical results indicate that the parking lot does contain low concentrations of lead, the off-site County import sources appear to be not contaminated, and the surficial tank bottom/asphaltic layer in the area of J-12 contains elevated concentrations of lead, ***Table IV, Additional Background Sample Analysis***. The area of J-12 was subsequently excavated and stockpiled with the other potentially contaminated material pending testing for proper management, ***Stockpile #3, Figure 7***.

(3) The stockpiled material pending proper management was re-sampled to determine the total lead content, ***Table V, Stockpile Re-Analysis for Total Lead***. Based upon the analytical results, two of the piles were determined to contain acceptable concentrations of total lead (i.e., less than seven ppm), ***Stockpile #3, Figure 7***.

6.3.1.2 *Secondary Sampling*

Based upon the above-mentioned analytical results and in consideration that the property owner was "self-certifying" the environmental conditions at the site (i.e., as requested by the construction lender), it was determined that all material to a depth of five feet should be excavated from the building pad area and stockpiled. The building pad's soil was then excavated by the CAT 980 loader in one foot lifts and stockpiled separately for further chemical characterization.

A total of six stockpiles were sampled; the "sixth" actually being the bottom of the excavation. As the soil from a one foot lift was excavated by the loader, each stockpile would contain up to six smaller stockpiles. Samples were taken with a hand auger and slide hammer sampler; the full profile depth of a stockpile was sampled. The higher the initial lead concentration the greater number of samples were analyzed for characterization purposes, ***Table VI, Sampling Frequency and Test Methodology***.

6.3.2 *Infill Analytical Results*

Since the highest lead concentration from the stockpile sampling was at 389 ppm, with an average concentration of less than 150 ppm and no samples exceeded either the Soluble Threshold Limit Concentration (STLC) or Toxicity Characteristic Leaching Procedure (TCLP) regulatory actions limits, it was determined that the soil should be acceptable for re-infill. Twenty samples were collected and composited into five samples for analysis from the first lift

to be placed back into the hole (i.e., at a depth of five feet). The maximum lead concentration was at 111 ppm, an averaged less than 80 ppm, ***Table VII, Base of Excavation/Secondary Infill Analysis.***

The previous analytical results indicated that an additional lift could be placed into the building pad area. This lift was sampled at a depth of 3.5 feet. Again, 20 samples were collected and composited into five samples for analysis. The highest lead concentration encountered was at 389 ppm, with an average concentration of approximately 200 ppm. Since two samples were at 379 and 389 ppm, APEE requested that the TCLP analysis be performed. The results of the five TCLP samples were all non-detectable, ***Table VIII, Second Lift/Secondary Infill Analysis.***

Again, based upon the analytical results from the second infill lift an additional layer of soil was placed into the building pad area. This lift was sampled at a depth of two feet. Twenty samples were collected and composited into five samples for analysis. The highest lead concentration encountered was at 136 ppm and the average was less than 120 ppm, ***Table IX, Third Lift/ Secondary Infill Analysis.***

At this time all infill operations ceased as the bank decided that closure from a regulatory agency would be required in order to secure Miller's construction loan. It was at this time that APEE recommended that the site enter into the DTSC "Voluntary Site Clean Ups, Walk-in Program" and that this PEA be performed.

7.0 HUMAN HEALTH SCREENING EVALUATION

The health-based preliminary remedial goals (PRG) criteria developed by the DTSC - Office of Scientific Affairs focus on copper, lead and zinc. For industrial/commercial usage properties the PRG's for copper, lead and zinc follow the TTLC values of 2,500, 1,000 and 5,000 ppm, respectively. Of these metals, only lead has a lower residential site usage PRG of approximately 200 ppm; therefore, the DTSC has specified lead as the "target" compound for determining the health-based PRG for most heavy metal contaminated properties. No concentrations of any of the aforementioned metals exceeded these goals. Concentrations of lead used in the screening process was 389 ppm at an average concentration of 90 ppm.

Prolonged exposure to lead may cause damage to the body's blood system and to the neural, urinary, and reproductive systems. The upper limits of lead levels classified as normal are 40 micrograms (μg) per 100 milliliters (ml) of blood or 90 μg/liter (L) of urine. The airborne allowable concentration is specified by the threshold limit value (TLV); it is set to a level to prevent systemic effects. The TLV is 0.15 milligrams per cubic meter (mg/m^3).

The exposure assessment utilized is the "Assessment of Health Risks from Inorganic Lead in Soil" is Chapter 7 of Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities.

7.1 *Exposure Pathways and Media of Concern*

The pathways for exposure for lead are depicted on ***Figure 8, Potential Lead Exposure Pathways, Site Conceptual Model in Appendix E.*** The primary pathways are inhalation and ingestion from the airborne transmission of lead impacted particulates. The potential likelihood for a release is low, as continual abatement measures will be employed during the site development activities. The exposed population, if any, will be limited to the on-site construction workers and immediately adjacent Parcel 2 facility employees.

The primary exposure pathway is from airborne transmission followed by inhalation or ingestion. To mitigate potential exposure, the lead impacted soil will be capped by the proposed building; the remainder of the site will be covered with asphalt and used as a parking lot.

7.2 *Exposure Point Concentration and Chemical Groups*

The parameters used for the screening evaluation are presented in ***Table X, Lead Screening Parameters, Appendix E.*** The criteria includes lead concentrations and parameters used for industrial exposures.

7.3 *Toxicity Values and Summary Tables*

The toxicity of lead for each exposure route is included in the screening level. The USEPA considers lead to be "a class B-2 carcinogen, with sufficient evidence in animals and inadequate evidence in humans" [1991c]. Therefore, a carcinogenic potency factor has not been assigned.

The upper limits of lead levels classified as normal are 40 micro grams (ug)/100 ml of blood or 90 ug/L of urine. The total threshold value is set at a level to prevent systemic effects. The federal OSHA time weighted average (TWA) is 0.2 milligrams per cubic meter (mg/m^3); the USEPA has set the national ambient air quality for lead at 1.5 mg/m^3, by the NIOSH Criteria document the TWA is 0.15 mg/m^3 [OSHA Guidance, Chapter 7].

7.4 *Risk Characterization and Summary Tables*

The goal of the PEA screening analysis is to "insure that no potential health hazard is overlooked". The reasonable maximum exposure to the on-site lead will be limited to the construction of the building pad and subsequent capping of the property. Utilizing the appropriate input values as listed in the above-mentioned Lead Screening Parameters table, the

exposure risk was calculated. This data is presented in ***Table XI, Lead Risk Assessment Spreadsheet, Appendix E.*** The levels of lead detected on the site are within the allowable limits as determined through this assessment. This analysis supports the industrial/commercial limit of 1,000 ppm of total lead.

8.0 ECOLOGICAL SCREENING EVALUATION

The site is devoid of any wildlife or plant life. The only wildlife species that have been seen on adjacent properties are ground squirrels. An ecological risk assessment has not been conducted due to the nature, location and planned disposition of the property. The impacted soils will not impact the environment or non-human receptors as it will be completely capped.

9.0 COMMUNITY PROFILE

It was at the direction of the City of Santa Fe Springs, Redevelopment Agency that Miller was asked to relocate his facilities. In doing so, the community has been supportive of this planned development and subsequent sale of Parcel 2. The lending institution has relied on Miller's longevity in the community and has extended him the capital to re-develop his site. At the ground breaking ceremony, the Major of Santa Fe Springs was in attendance.

10.0 CONCLUSIONS AND RECOMMENDATIONS

10.1 *Summary and Conclusions*

- The past practices of the handling of hazardous waste/substances on the adjacent property may have resulted in the release of lead contamination.

- The release does not pose a significant threat to the public health or the environment. The concentration of lead impacted soil is less than the State developed health-based preliminary remedial goal of 1,000 ppm of total lead for industrial/commercial sites. The lead impacted soil will be capped underneath the building and associated parking lot.

- The release does not pose an immediate potential hazard to the public health or the environment. The average composite analysis is 90 ppm of lead. The State developed health-based preliminary remedial goal for residential site usage is approximately 200 ppm. There is no wildlife or plant life present on the property. The property does not contain any water bodies nor is there any in close proximity; nearest groundwater is

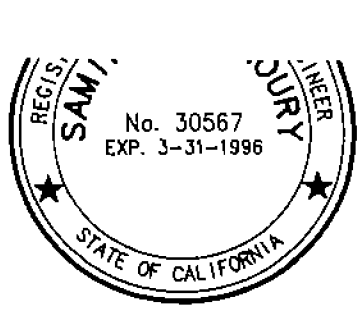
APPENDIX A

ALASKA PETROLEUM
ENVIRONMENTAL
ENGINEERING

Figure 1
Parcel Map

SAMIR M. KHOURY, R.C.E. 30567
EXPIRATION DATE 3-31-1996

DATE



CITY ENGINEER'S STATEMENT

I HEREBY STATE THAT I HAVE EXAMINED THIS MAP AND THAT IT CONFORMS SUBSTANTIALLY TO THE TENTATIVE MAP AND ALL APPROVED ALTERATIONS THEREOF; THAT ALL PROVISIONS OF STATE LAW AND SUBDIVISION ORDINANCE OF THE CITY OF SANTA FE SPRINGS APPLICABLE AT THE TIME OF APPROVAL OF THE TENTATIVE MAP HAVE BEEN COMPLIED WITH; AND THAT I AM SATISFIED THAT THIS MAP IS TECHNICALLY CORRECT.

JOHN R. PRICE, CITY ENGINEER RCE 28182
LICENSE EXPIRES 3-31-1998

DATE

PPEARED
LLY KNOWN
ENCE TO BE
STRUMENT AND
R AUTHORIZED
NT THE
S ACTED,

CITY CLERK'S STATEMENT

I HEREBY STATE THAT THE CITY COUNCIL OF THE CITY OF SANTA FE SPRINGS BY MOTION PASSED , APPROVED THE ATTACHED MAP OF PARCEL MAP NO. 24028 AND ACCEPTED ON BEHALF OF THE PUBLIC ALL STREETS, HIGHWAY, AND OTHER PUBLIC WAYS SHOWN ON SAID MAP.

JUDITH A. CHAVEZ , CITY CLERK

DATE

CITY TREASURER'S STATEMENT

I HEREBY STATE THAT ALL SPECIAL ASSESSMENTS LEVIED UNDER THE JURISDICTION OF THE CITY OF SANTA FE SPRINGS, TO WHICH THE LAND INCLUDED IN THE WITHIN SUBDIVISION OR ANY PART THEREOF, IS SUBJECT, AND WHICH MAY BE PAID IN FULL, HAVE BEEN PAID IN FULL.

OOK 204
JNTY.

DONALD M. NUTTALL, CITY TREASURER

DATE

SIGNATURE OMISSIONS

THE FOLLOWING SIGNATURES HAVE BEEN OMITTED UNDER THE PROVISIONS OF SECTION 66436 (A) 3 A (I-VIII) OF THE SUBDIVISION MAP ACT AS THEIR INTEREST IS SUCH THAT IT CANNOT RIPEN INTO A FEE TITLE AND SAID SIGNATURES ARE NOT REQUIRED BY THE LOCAL AGENCY:

SANTA GERTRUDES LAND ASSOCIATION, A CORPORATION, EASEMENT HOLDER BY DEED RECORDED FEBRUARY 21, 1877 IN BOOK 52 PAGE 319 OF DEEDS.

HASKELL M. GREEN, LESSEE UNDER AN UNRECORDED LEASE DISCLOSED BY THE PROCEEDINGS HAD IN THE MATTER OF THE ESTATE OR RAY C. SLEEPER, DECEASED, SUPERIOR COURT OF LOS ANGELES COUNTY CASE NO. 319184 PROBATE RECORDED (NOT SHOWN).

UNOCAL, A CALIFORNIA CORPORATION, SUCCESSOR TO UNION OIL COMPANY OF CALIFORNIA, LESSEE DISCLOSED BY LEASE RECORDED JUNE 2, 1977 AS INSTRUMENT NO. 77-580172, OFFICIAL RECORDS.

APR 11 1995 DSD-101

. MAP No. 24028

:ITY OF SANTA FE SPRINGS
ANGELES, STATE OF CALIFORNIA

OF A PORTION OF THE NORTHWEST QUARTER
)UARTER OF SECTION 6, TOWNSHIP 3 SOUTH,
SHOWN UPON A MAP OF THE SOUTHERN
CHO SANTA GERTRUDES, RECORDED IN BOOK
ELLANEOUS RECORDS, IN THE OFFICE OF THE
F SAID COUNTY.

)ORY ENGINEERING

ESTED IN THE
MITHIN THE
ION AND

YS, AND

, OWNERS.

PPEARED
LLY KNOWN
ENCE TO BE
STRUMENT AND
AUTHORIZED
NT THE
ACTED

ENGINEER'S STATEMENT

THIS MAP WAS PREPARED BY ME OR UNDER MY DIRECTION AND WAS COMPILED FROM RECORD DATA IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCE AT THE REQUEST OF DONALD GRANDCOURT MILLER ON MARCH 30, 1994.

I HEREBY STATE THAT THIS PARCEL MAP SUBSTANTIALLY CONFORMS TO THE APPROVED OR CONDITIONALLY APPROVED TENTATIVE MAP, IF ANY.

SAMIR M. KHOURY, R.C.E. 30567
EXPIRATION DATE 3-31-1996

DATE

REGISTERED PROFESSIONAL ENGINEER
SAMIR M. KHOURY
No. 30567
EXP. 3-31-1996
STATE OF CALIFORNIA

CITY ENGINEER'S STATEMENT

I HEREBY STATE THAT I HAVE EXAMINED THIS MAP AND THAT IT CONFORMS SUBSTANTIALLY TO THE TENTATIVE MAP AND ALL APPROVED ALTERATIONS THEREOF; THAT ALL PROVISIONS OF STATE LAW AND SUBDIVISION ORDINANCE OF THE CITY OF SANTA FE SPRINGS APPLICABLE AT THE TIME OF APPROVAL OF THE TENTATIVE MAP HAVE BEEN COMPLIED WITH; AND THAT I AM SATISFIED THAT THIS MAP IS TECHNICALLY CORRECT.

JOHN R. PRICE, CITY ENGINEER RCE 28182
LICENSE EXPIRES 3-31-1998

DATE

REGISTERED PROFESSIONAL ENGINEER
JOHN R. PRICE
No. 28182
EXP. 3-31-1998
STATE OF CALIFORNIA

CITY CLERK'S STATEMENT

I HEREBY STATE THAT THE CITY COUNCIL OF THE CITY OF SANTA FE SPRINGS BY MOTION PASSED , APPROVED THE ATTACHED MAP OF PARCEL MAP NO. 24028 AND ACCEPTED ON BEHALF OF THE PUBLIC ALL STREETS, HIGHWAY, AND OTHER PUBLIC WAYS SHOWN ON SAID MAP.

JUDITH A. CHAVEZ , CITY CLERK

DATE

PARCEL MAP No

IN THE CITY OF SANTA F
COUNTY OF LOS ANGELES, STATE

BEING A SUBDIVISION OF A PORTION OF THE
OF THE NORTHEAST QUARTER OF SECTION 6
RANGE 11 WEST, AS SHOWN UPON A MAP O
PORTION OF THE RANCHO SANTA GERTRUDE
1 PAGE 502 OF MISCELLANEOUS RECORDS,
COUNTY RECORDER OF SAID COUNTY.

COORY ENGINEERIN

OWNER'S STATEMENT

WE HEREBY STATE THAT WE ARE THE OWNERS OF OR ARE INTERESTED IN THE LANDS INCLUDED WITHIN THE SUBDIVISION SHOWN ON THIS MAP WITHIN THE DISTINCTIVE BORDER LINES, AND WE CONSENT TO THE PREPARATION AND FILING OF SAID MAP AND SUBDIVISION.

WE HEREBY DEDICATE TO THE PUBLIC USE ALL STREETS, HIGHWAYS, AND OTHER PUBLIC WAYS SHOWN ON SAID MAP.

DONALD GRANDCOURT MILLER AND BIRDIE ANN MILLER, OWNERS.

_____
DONALD GRANDCOURT MILLER (OWNER)

_____
BIRDIE ANN MILLER (OWNER)

NOTARY ACKNOWLEDGEMENT

STATE OF CALIFORNIA)
) SS
COUNTY OF LOS ANGELES)

ON , BEFORE ME PERSONALLY APPEARED DONALD GRANDCOURT MILLER AND BIRDIE ANN MILLER, PERSONALLY KNOWN TO ME OR PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSONS WHOSE NAMES ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT THEY EXECUTED THE SAME IN THEIR AUTHORIZED CAPACITIES, AND THAT BY THEIR SIGNATURES ON THE INSTRUMENT THE PERSONS, OR THE ENTITY UPON BEHALF OF WHICH THE PERSONS ACTED, EXECUTED THE INSTRUMENT.

WITNESS MY HAND

SIGNATURE _____
NOTARY PUBLIC IN AND FOR SAID STATE

_____
(NAME PRINTED)

MY PRINCIPAL PLACE OF BUSINESS IS IN

_____ COUNTY.

MY COMMISSION EXPIRES _____.

ENGINEE

THIS MAP
FROM REC
SUBDIVISIO
GRANDCOU

I HEREBY
APPROVED

_____
SAMIR M. I
EXPIRATION

CITY EN

I HEREBY S
SUBSTANTI
THEREOF;
ORDINANCE
OF APPROV
THAT I AM

_____
JOHN R. PR
LICENSE EX

CITY CLE

I HEREBY S
SPRINGS BY
OF PARCEL
STREETS, HI

_____
JUDITH A. C

N'LY LINE OF SECTION 6, T 3 S,
R 11 W, SAN BERNARDINO MERIDIAN.

S'LY LINE OF PARCEL 4, PARCEL MAP No. 22967
PER MAP BOOK 249 PAGES 7 – 8

S'LY LINE OF PARCEL 3, PARCEL MAP No. 22967
PER MAP BOOK 249 PAGES 7 – 8

FD. 3 1/2" BRASS
CAP PER P.M. 18240
P.M.B. 204/16–17.

280.74'

WIDE EASEMENT FOR ROADS,
DITCHES, AND WATER COURSES.
GERTRUDES LAND ASSOCIATION
EASEMENT HOLDER BY DEED
FEBRUARY 21, 1877 IN BOOK
519 OF DEEDS.

PARCEL 1

0.863 ACRES GROSS
0.852 ACRES NET

132.20'

264.40'

E'LY LINE OF THE W 1/2, W 1/2, NW 1/4,
NE 1/4, SECTION 6, T 3 S, R 11 W.

9°49'12"E

280.66'

PARCEL 2

0.863 ACRES GROSS
0.852 ACRES NET

132.20'

N0°00'11"E

°49'12"E

280.59'

FD. 1" I.P. L.S. 5025
PER P.M. 18240
P.M.B. 204/16–17.

N'LY LINE OF PARCEL 1, PARCEL MAP No. 18240
PER MAP BOOK 204 PAGES 16 – 17

APR 11 1995

SHEET 2 OF 2 SHEETS

MAP No. 24028

ITY OF SANTA FE SPRINGS
ANGELES, STATE OF CALIFORNIA

ORY ENGINEERING

BOUNDARY OF PROPERTY SUBDIVIDED BY THIS MAP

FOUND MONUMENT AS NOTED

S'LY LINE OF PARCEL 3, PARCEL MAP No. 22967
PER MAP BOOK 249 PAGES 7 – 8

N'LY LINE OF SECTION 6, T 3 S,
R 11 W, SAN BERNARDINO MERIDIAN

S'LY LINE OF PARCEL 4, PARCEL MAP No. 22967
PER MAP BOOK 249 PAGES 7 – 8

FD. 3 1/2" BRASS
CAP PER P.M. 18240
P.M.B. 204/16–17.

280.74'

WIDE EASEMENT FOR ROADS,
DITCHES, AND WATER COURSES,
GERTRUDES LAND ASSOCIATION,
ASEMENT HOLDER BY DEED
FEBRUARY 21, 1877 IN BOOK
19 OF DEEDS.

PARCEL 1

0.863 ACRES GROSS
0.852 ACRES NET

132.20'

264.40'

'49'12"E

280.66'

LY LINE OF THE W 1/2, W 1/2, NW 1/4,
E 1/4, SECTION 6, T 3 S, R 11 W.

BOULEVARD

NORWALK

50'

100'

50'

96

N 89°49'12" E
3.62'

FD. 2" I.P. NO TAG
PER P.M. 22967
P.M.B. 249/7-8.

N'LY LINE OF SECTION 6, T 3 S,
R 11 W, SAN BERNARDINO MERIDIAN.

S'LY LINE OF PARCEL 4, PARCEL MAP No. 2296
PER MAP BOOK 249 PAGES 7 - 8

50.00'
N 89°49'12" E

N89°49'12"E

EXIST. 30' WIDE EASEMENT FOR ROADS,
RAILROADS, DITCHES, AND WATER COURSES.
OF SANTA GERTRUDES LAND ASSOCIATION,
A CORP., EASEMENT HOLDER BY DEED
RECORDED FEBRUARY 21, 1877 IN BOOK
52 PAGE 319 OF DEEDS.

℄

132.20'

NORWALK BOULEVARD DEDICATION

264.40'

264.40'

132.20'

PARCEL 1

0.863 ACRES GROSS
0.852 ACRES NET

50.00'
N 89°49'12" E

N89°49'12"E

N00°01'46"W
132.20'

℄

N 00°00'51" E

132.20'

N 00°01'46" W

50.00'
N 89°49'12" E

N89°49'12"E

100'

N 89°49'12" E
3.82'

FD. 1" I.P. L.S. 5025
PER P.M. 18240
P.M.B. 204/16-17.

50'

50'

357.40'

N'LY LINE OF PARCEL 1, PARCEL MAP No
PER MAP BOOK 204 PAGES 16 - 17

PARCEL 2

0.863 ACRES GROSS
0.852 ACRES NET

HAWKINS STREET

℄

N89°58'14"E

328.62'

FD. C. NAIL

Fd. L & TAG

SCALE : 1" = 30'

PARCEL MAP No

IN THE CITY OF SANTA F
COUNTY OF LOS ANGELES, STATE

COORY ENGINEERIN

SMITH AVENUE

℄

FD. PK. NAIL

1589.08'

967.28'

100'

50'

50'

BOULEVARD

N 89°49'12" E
3.62'

FD. 2" I.P. NO TAG
PER P.M. 22967
P.M.B. 249/7-8.

N'LY LINE OF SECTION 6, T 3 S,
R 11 W, SAN BERNARDINO MERIDIAN.

S'LY LINE OF PARCEL 4, PARCEL MAP No. 2
PER MAP BOOK 249 PAGES 7 – 8

N89°49'12"E

50.00'
N 89°49'12" E

EXIST. 30' WIDE EASEMENT FOR ROADS,
RAILROADS, DITCHES, AND WATER COURSES.
OF SANTA GERTRUDES LAND ASSOCIATION,
A CORP., EASEMENT HOLDER BY DEED
RECORDED FEBRUARY 21, 1877 IN BOOK
52 PAGE 319 OF DEEDS.

℄

264.40'

264.40'

132.20'

132.20'

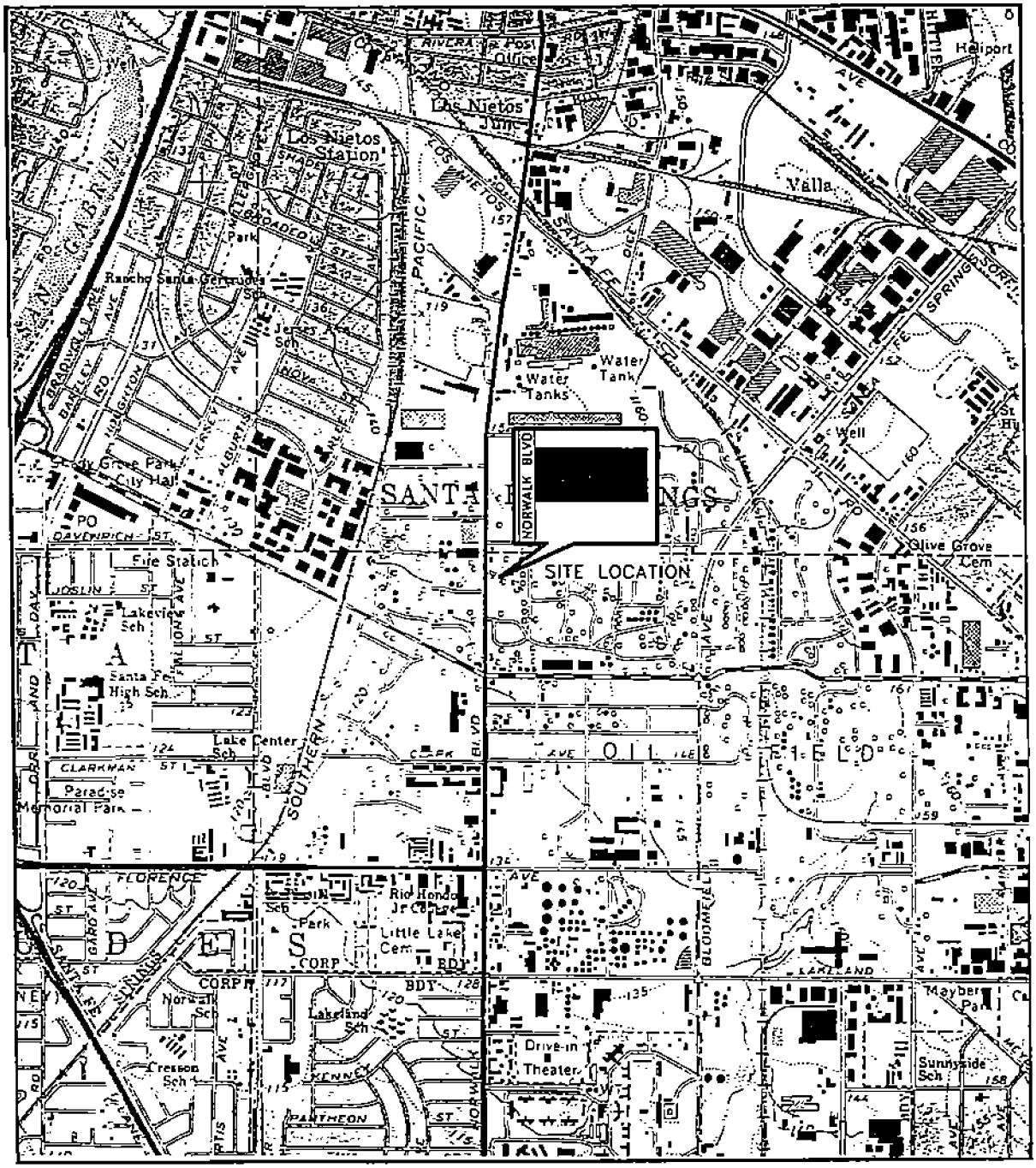
NORWALK BOULEVARD DEDICATION

50.00'
N 89°49'12" E

N89°49'12"E

PARCEL 1

0.863 ACRES GROSS
0.852 ACRES NET



UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY, WHITTIER QUADRANGLE, 7.5 MINUTE SERIES (TOPOGRAPH).
WHITTIER, CALIFORNIA (PHOTO REVISED 1981)

Approximate Scale 1" = 2,000

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING
P.O. Box14766
Long Beach, CA 90803
(310)433-5144
P.O. Box 81904
Fairbanks, AK, 99708
(907)479-9555

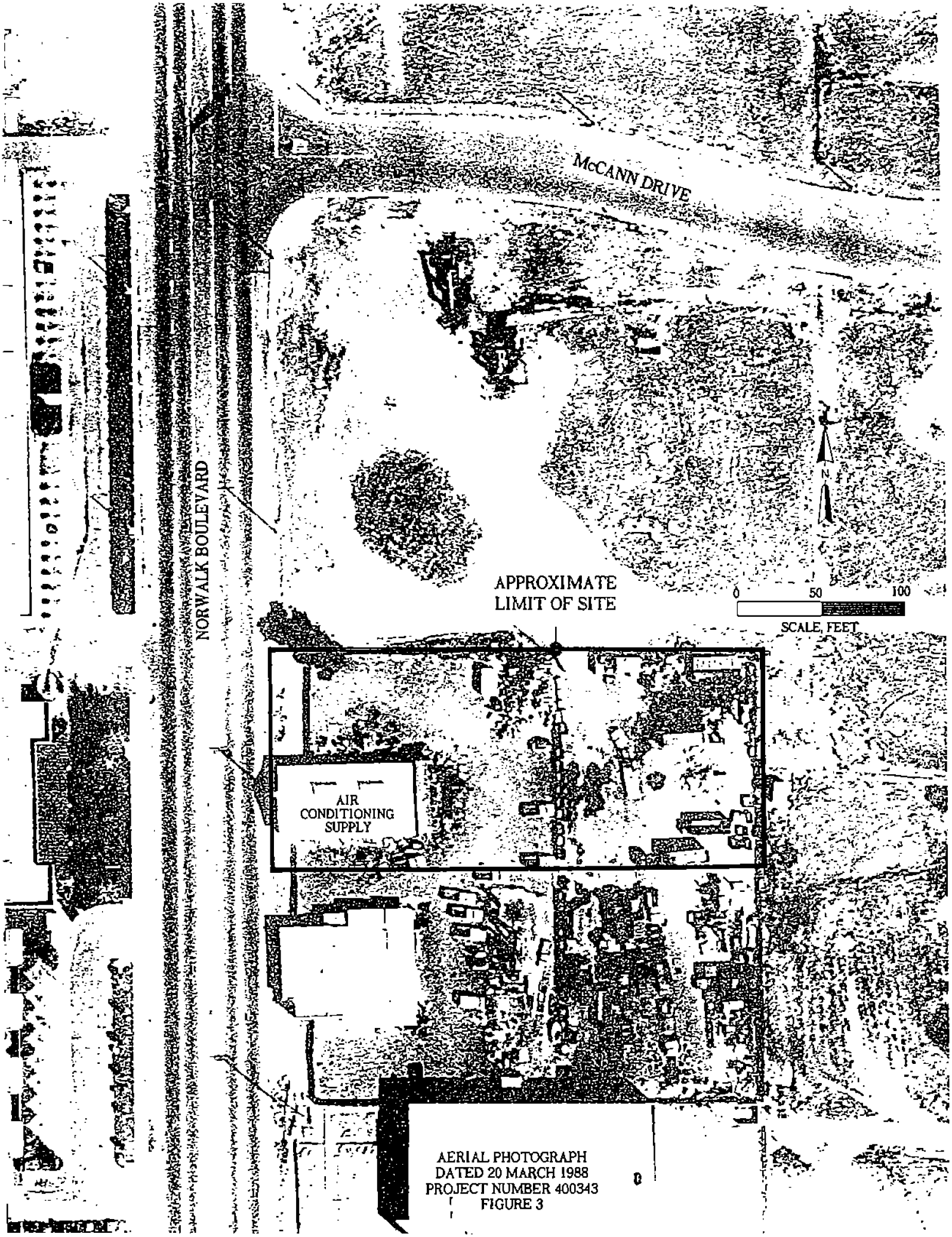
TITLE:

DON MILLER–ATLAS RADIATOR COMPANY

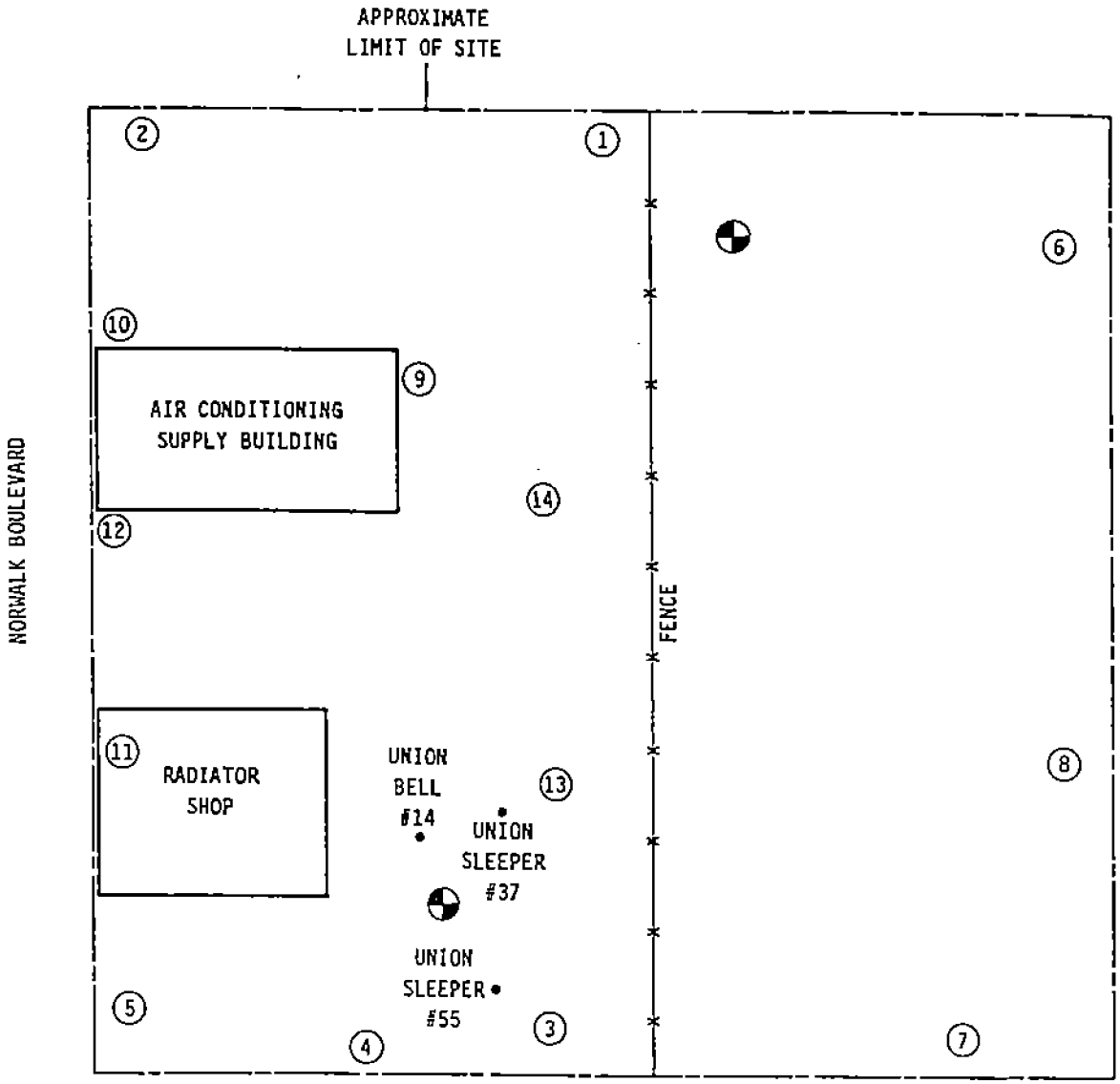
Site Address: 10110 Norwalk Blvd.
Santa Fe Springs, CA

SITE LOCATION MAP

DES.: S.R.R.	PROJECT NO.: 400343
APPD: A.L.S.	FIGURE NO.: 2
DATE: 4/95	



AERIAL PHOTOGRAPH
DATED 20 MARCH 1988
PROJECT NUMBER 400343
FIGURE 3



EXPLANATION

(1) METHANE PROBE LOCATION AND DESIGNATION

PROPOSED MONITORING WELL LOCATION

UNION BELL #14 OIL WELL LOCATION AND DESIGNATION

NOTES:

1) ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE
2) METHANE PROBE AND PROPOSED MONITORING WELL LOCATIONS SUPPLIED BY GEOSCIENCE ANALYTICAL, INC.

NORTH

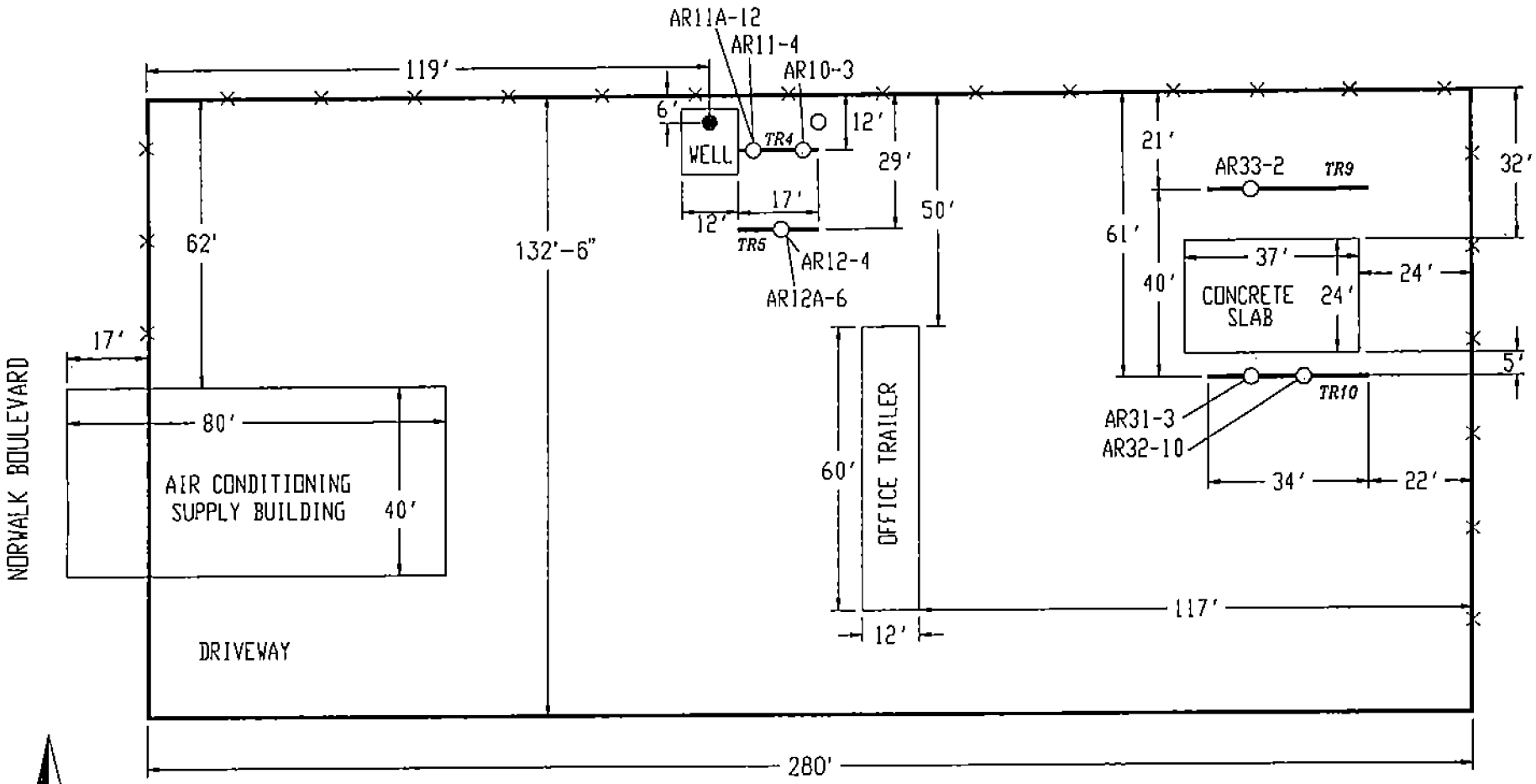
0 50 100

SCALE, FEET

APPLIED GEOSCIENCES INC.
Engineering Geology and Hazardous Materials Consultants

METHANE PROBE LOCATIONS

PROJECT NUMBER A881311 | FIGURE 4



SAMPLE IDENTIFICATION EXAMPLE:

AR1-9 = ATLAS RADIATOR, SAMPLE 1. TAKEN AT NINE (9) FEET BELOW GROUND SURFACE

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

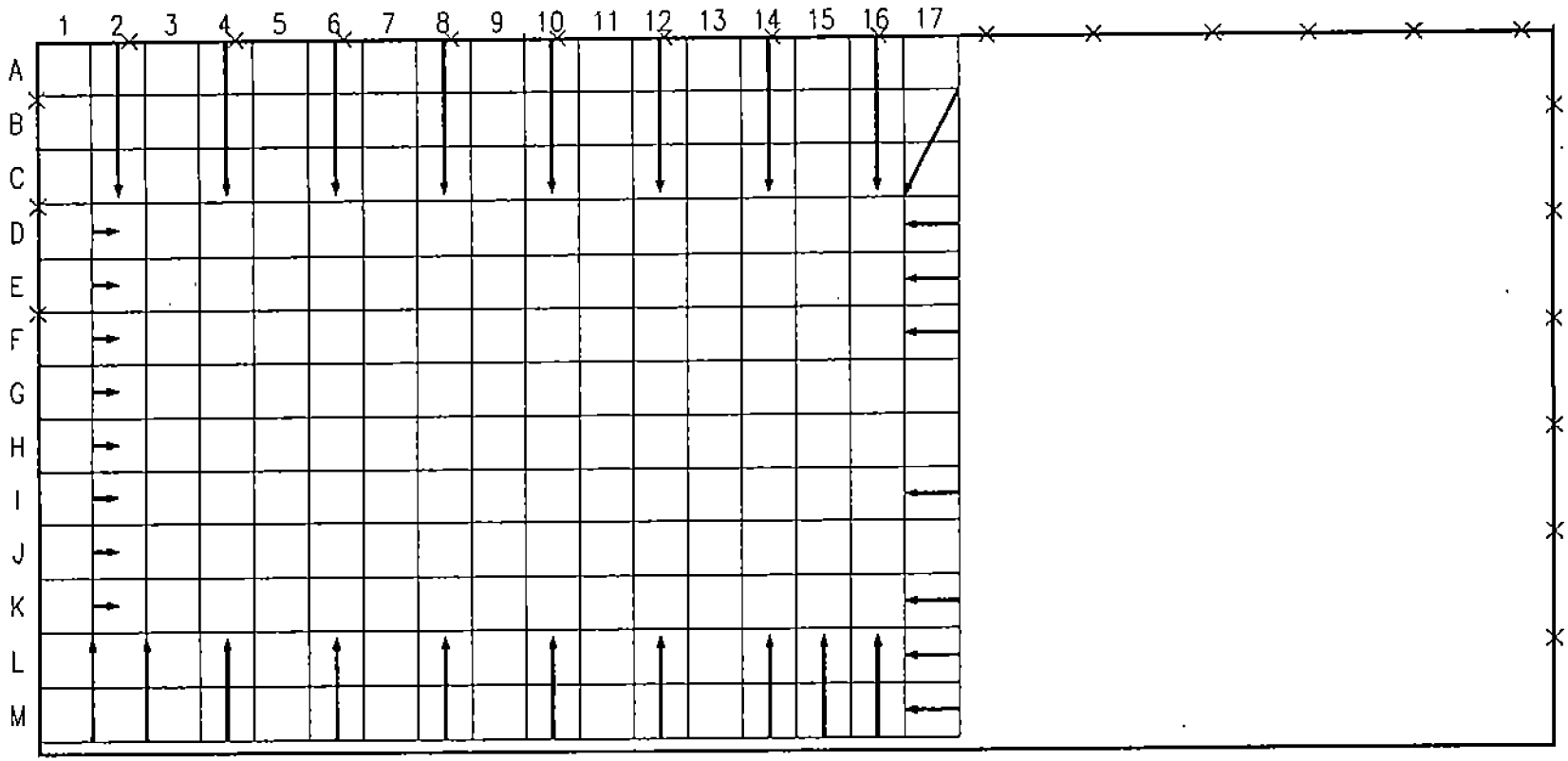
Alaska Office
P.O. Box 81004
Fairbanks, Alaska 99708
907-479-9555

California Office
P.O. Box 14768
Long Beach, California 90803
310-433-5144
Fax: 310-433-5998

LEGEND:
- X = CHAIN LINK FENCE
- ● = WELL HEAD LOCATION
- ⊙ = POWER POLE LOCATION
- ○ = SAMPLE LOCATION
- — = TRENCHING LOCATION

TITLE: DON MILLER – ATLAS RADIATOR COMPANY
10110 NORWALK BOULEVARD
SANTA FE SPRINGS, CA
SITE CHARACTERIZATION DIAGRAM – APEE

DWN:	DES.:	PROJECT NO.:
S.R.R.	S.R.R.	400343
CHKD:	APPD:	FIGURE NO.:
A.L.S.	A.L.S.	5
DATE: 4/95	REV.: 0	



ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

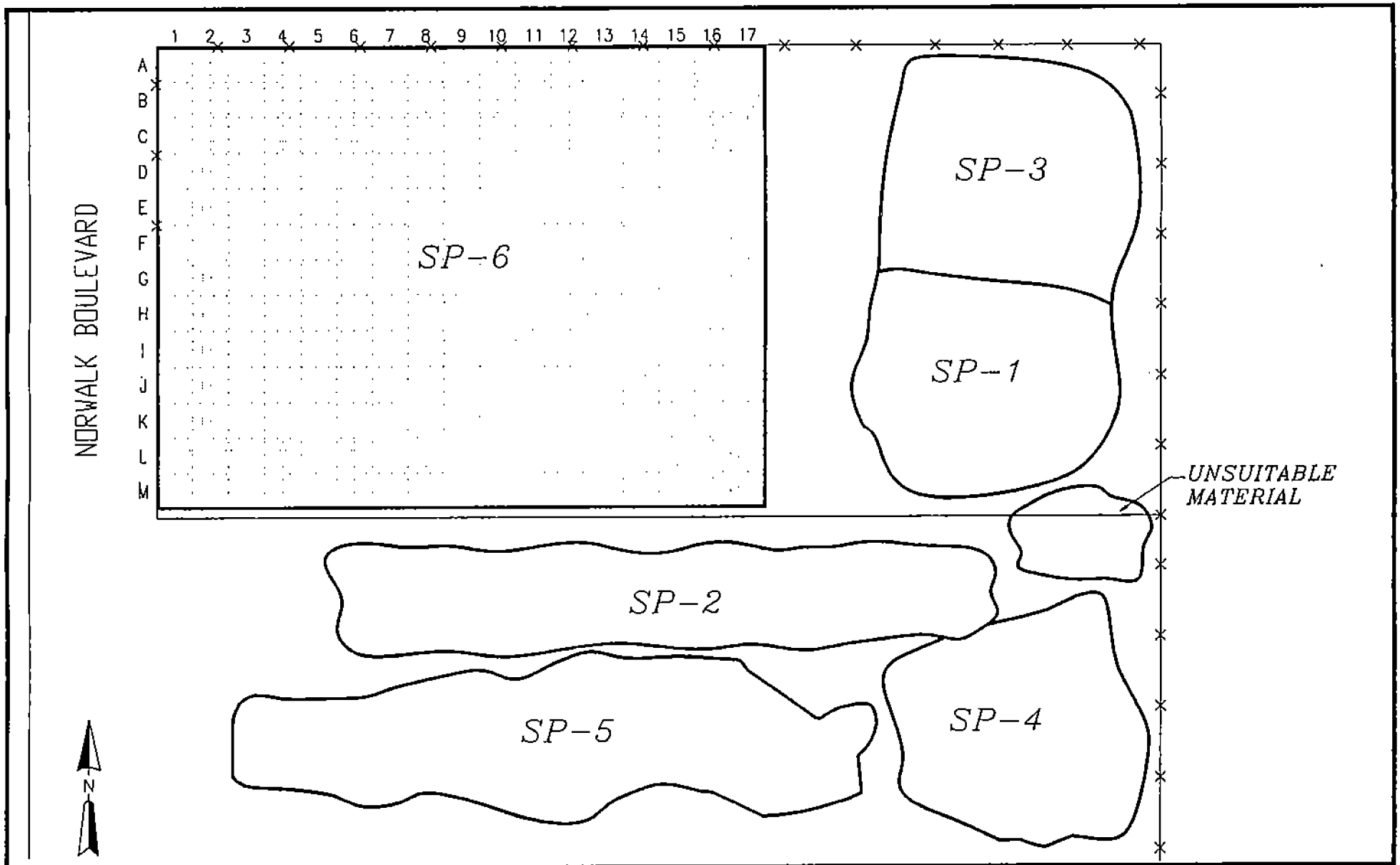
Alaska Office
P.O. Box 81904
Fairbanks, Alaska 99708
907-479-9555

California Office
P.O. Box 14788
Long Beach, California 90803
310-433-5144
Fax: 310-433-6998

LEGEND:

TITLE: DON MILLER – ATLAS RADIATOR COMPANY
10110 NORWALK BOULEVARD
SANTA FE SPRINGS, CA
SITE GRADING SAMPLING GRID – APEE

DWN:	DES.:	PROJECT NO.:
S.R.R.	S.R.R.	400343
CHKD:	APPD:	FIGURE NO.:
A.L.S.	A.L.S.	6
DATE:	REV.:	
4/95	0	



ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING
Alaska Office
P.O. Box 81004
Fairbanks, Alaska 99708
907-479-9535
California Office
P.O. Box 14766
Long Beach, California 90803
310-433-5144
Fax: 310-433-6998

LEGEND:
SP-6 IDENT.
STOCKPILE

TITLE: DON MILLER – ATLAS RADIATOR COMPANY
10110 NORWALK BOULEVARD
SANTA FE SPRINGS, CA
STOCKPILE LOCATION DIAGRAM

DWN:	DES.:	PROJECT NO.:
S.R.R.	S.R.R.	400343
CHKD:	APPD:	FIGURE NO.:
A.L.S.	A.L.S.	7
DATE:	REV.:	
4/95	0	

APPENDIX B

APEE Site Characterization Results

Sample ID	Sample Depth (feet)	EPA 8015 (mg/kg)	EPA 8010 (mg/kg)	EPA 8020 (mg/kg)	EPA 418.1 (mg/kg)	EPA 9045 (pH)	CCR Metals (mg/kg)
Trench 4							
AR-10	4	ND	ND	ND	ND	7.5	BTL
AR-11	4 Archive						
AR-11A	1			ND	240	7.9	BTL
Trench 5							
AR-12	4 Archive						
AR-12A	0.5	ND	ND	T=0.089	140	8.7	Pb=66.9
Trench 9							
AR-33	2	ND	ND	ND	470	9.0	Pb=57.4
Trench 10							
AR-31	3	ND	ND	ND	11	9.2	BTL
AR-32	10	ND	ND	ND	ND	9.5	BTL

ID = Identification
mg/kg = milligrams per kilogram
8015 = Total Fuel Petroleum Hydrocarbons
8010 = Purgable Halocarbons
8020 = Benzene, toluene, xylenes, ethylbenzene
CCR Metals = Total Threshold Limit Concentration Metals
Pb = Lead
ND = Not Detected
BTL = Below Threshold Limits

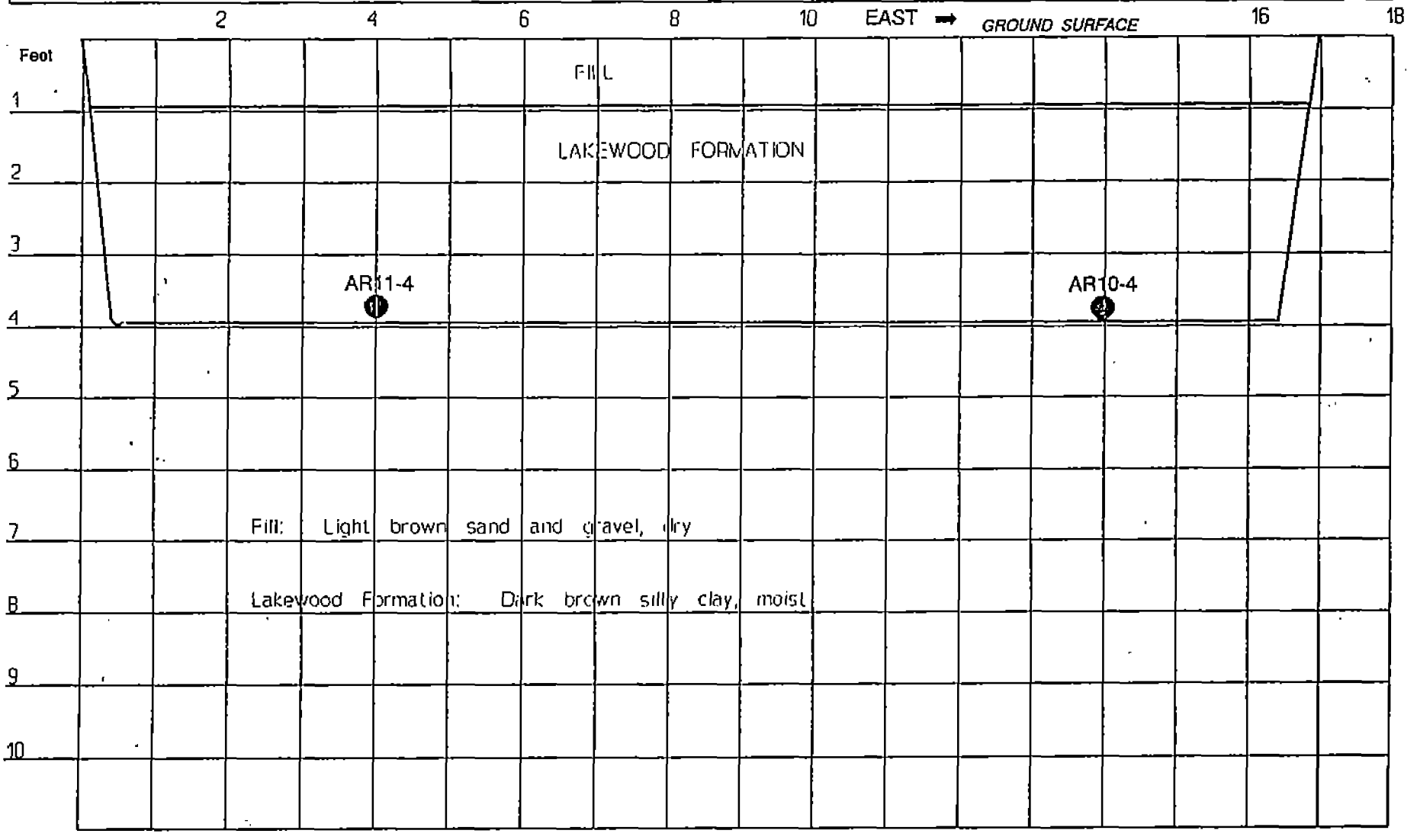
ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766
Long Beach, California
(213) 433-5144 90803

P.O. Box 81904
Fairbanks, Alaska
(907) 479-9555 99708

Project Name: Atlas Radiator
Project Number: 91-10016
Horizontal Scale: 1" = 2'
Vertical Scale: 1" = 2'

Date: 10/4/91
Trench Number: 4
Logged By: MW/FB



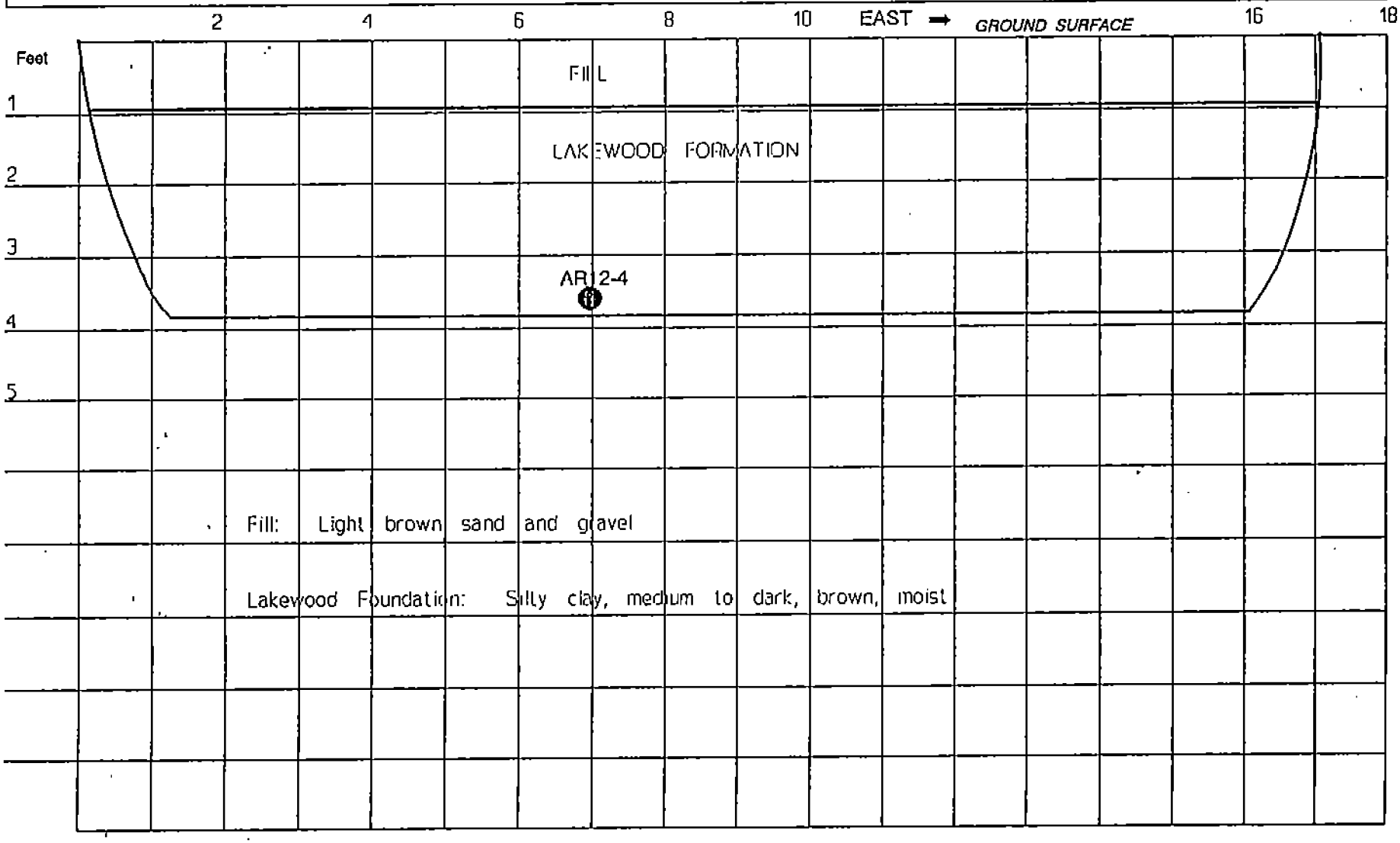
ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766
Long Beach, California
(213) 433-5144 90803

P.O. Box 81904
Fairbanks, Alaska
(907) 479-9555 99708

Project Name Atlas Radiator
Project Number 91-10016
Horizontal Scale 1" = 2'
Vertical Scale 1" = 2'

Date 10/4/91
Trench Number 5
Logged By MW/FB



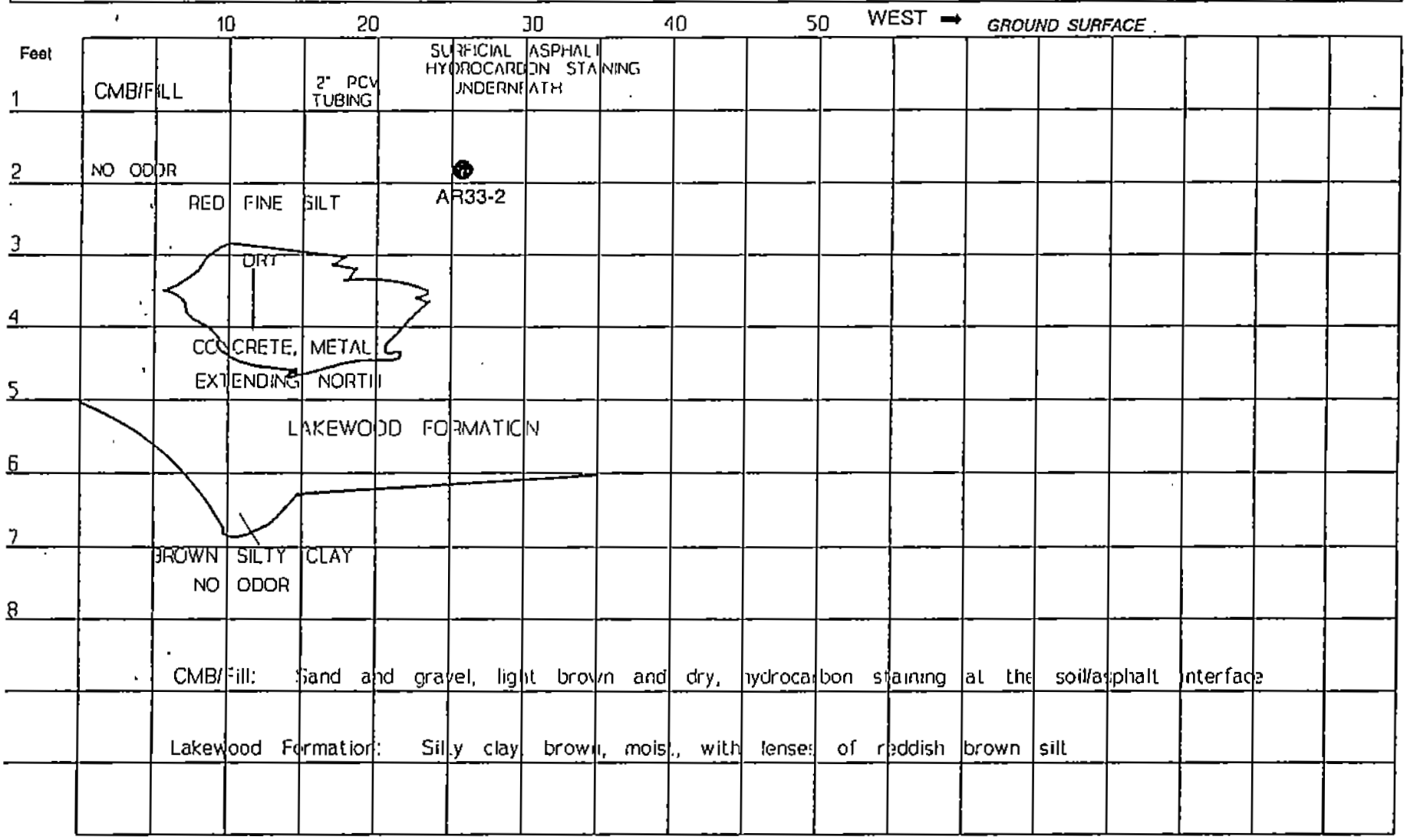
ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766
Long Beach, California
(213) 433-5144 90803

P.O. Box 81904
Fairbanks, Alaska
(907) 479-9555 99708

Project Name Atlas Radiator
Project Number 91-10016
Horizontal Scale 1" = 10'
Vertical Scale 1" = 2'

Date 10/4/91
Trench Number 9
Logged By MW/FB



CMB/Fill: Sand and gravel, light brown and dry, hydrocarbon staining at the soil/asphalt interface

Lakewood Formation: Silty clay brown, moist, with lenses of reddish brown silt

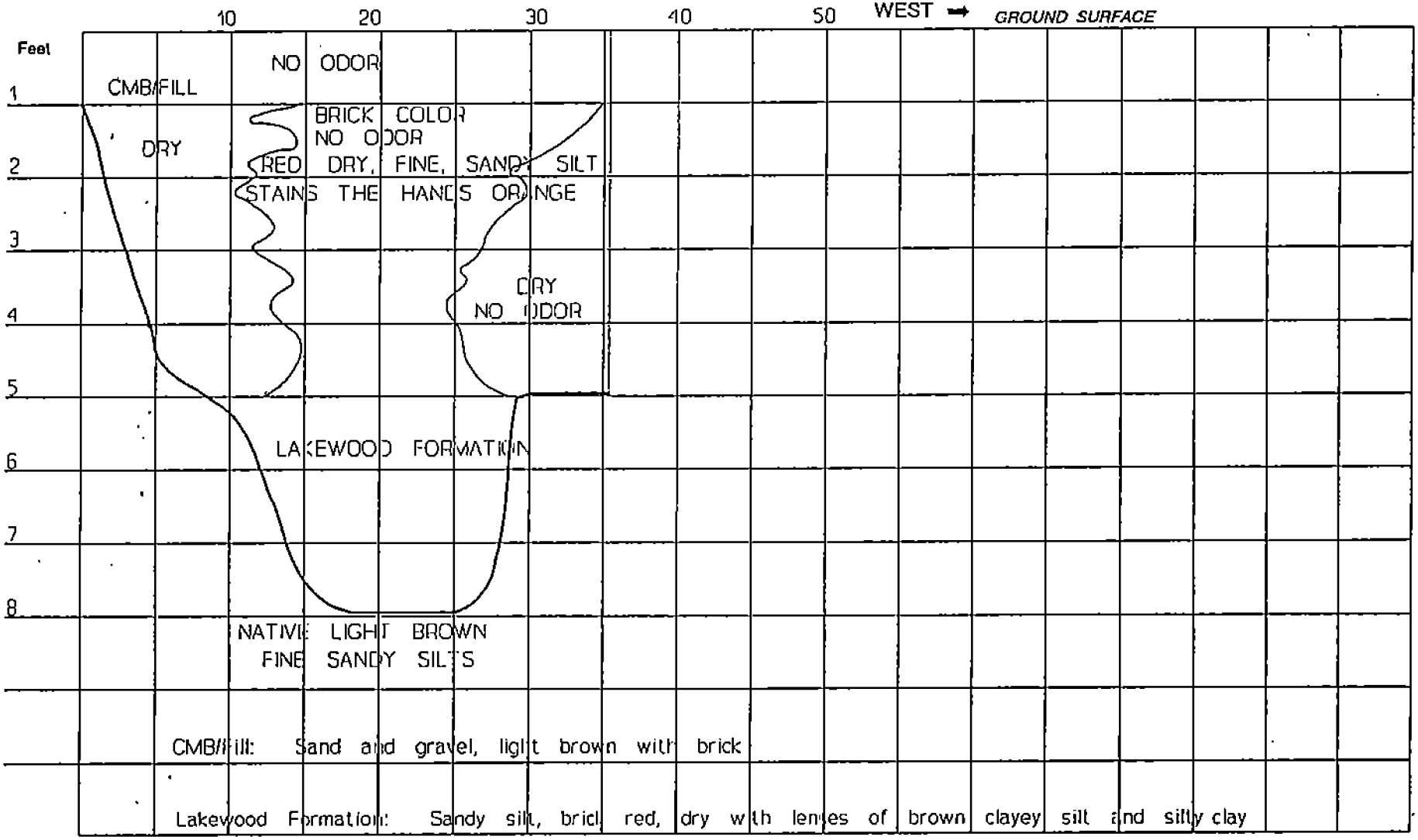
ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766
Long Beach, California
(213) 433-5144 90803

P.O. Box 81904
Fairbanks, Alaska
(907) 479-9555 99708

Project Name Atlas Radiator
Project Number 91-10016
Horizontal Scale 1" = 10'
Vertical Scale 1" = 2'

Date 10/4/91
Trench Number 10
Logged By MW/FB



APPENDIX C

McLaren Hart
ENVIRONMENTAL ENGINEERING CORPORATION

16755 Von Karman Avenue
Irvine, California 92714

FAX TRANSMITTAL SHEET

TO:		FROM:	
FAX#:	310-433-6998	Name:	Christine Bilello
Company:	Alaska Petroleum Envir.	Job/Task:	OFRP GW
Attention:	Glenn Spillman	Date:	6/13/94

Description/Title of Document: Groundwater contour map and groundwater analytical data for OFRP MW-1

Number of Pages 10, including FAX transmittal sheet

If you do not receive all pages, please notify us as soon as possible

Phone: 714/756-2667
FAX: 714/756-8460
Direct Dial Number for Sender: 714-752-3258

Hard copy to follow via:	
U.S. Mail	___
Federal Express	___
Original not to follow	✓

Note: Hello Glenn -

Attached is a groundwater contour map of the 23 (MW-1 thru MW-23) groundwater monitoring wells installed for the Santa Fe Springs Oil Field Reclamation Project. Per First State Bankc request. I have also sent the groundwater analytical data for Monitoring well MW-1 - located N 806' north of Telegraph ~~and~~ Rd. (See 2nd contour map for street names.)

Christine Bilello
Person Transmitting FAX

714-752-3258
Direct Telephone Number

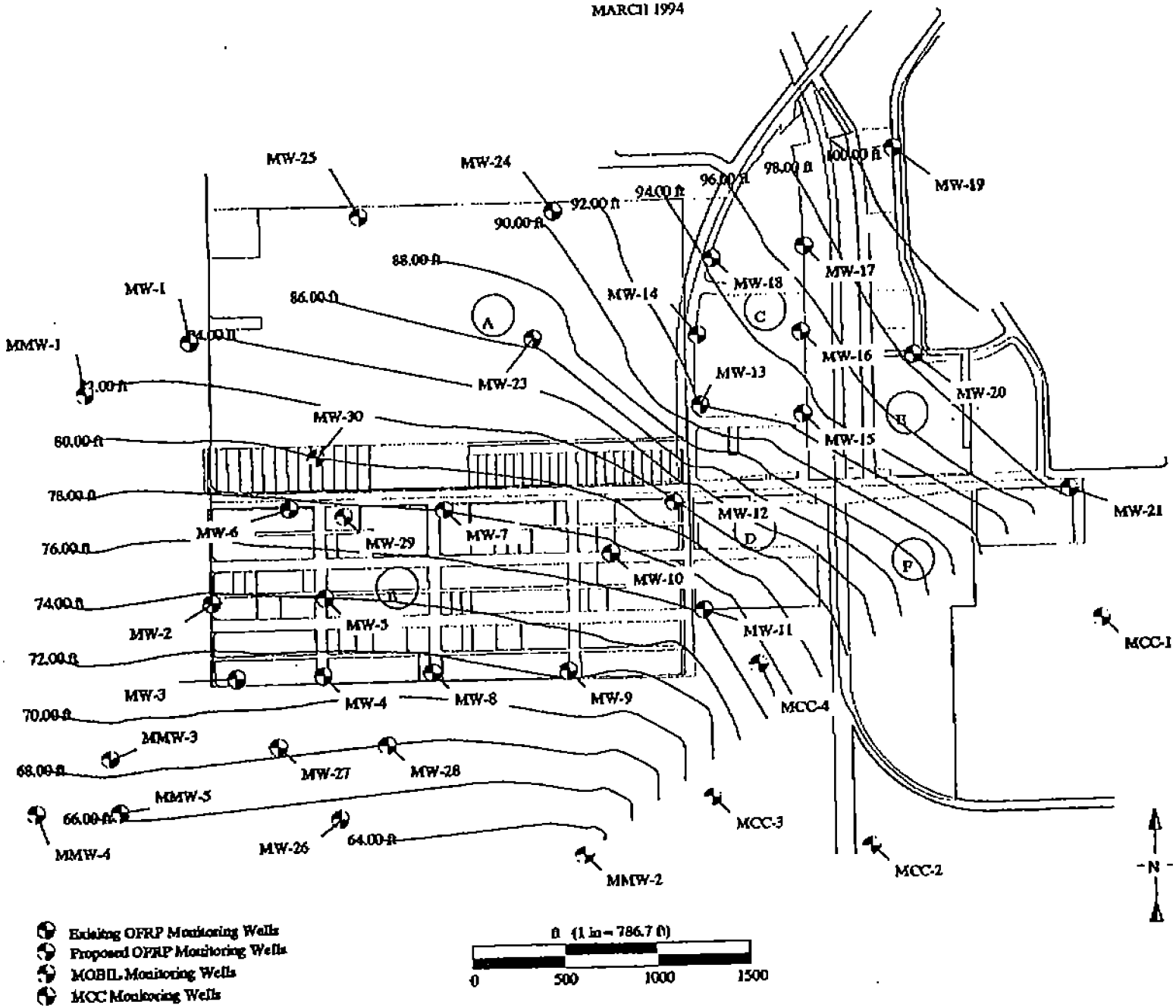
Do call if any questions. - Christine Bilello

GROUNDWATER ELEVATION CONTOUR MAP

OFRP GROUNDWATER CHARACTERIZATION PROJECT

SANTA FE SPRINGS, CALIFORNIA

MARCH 1994

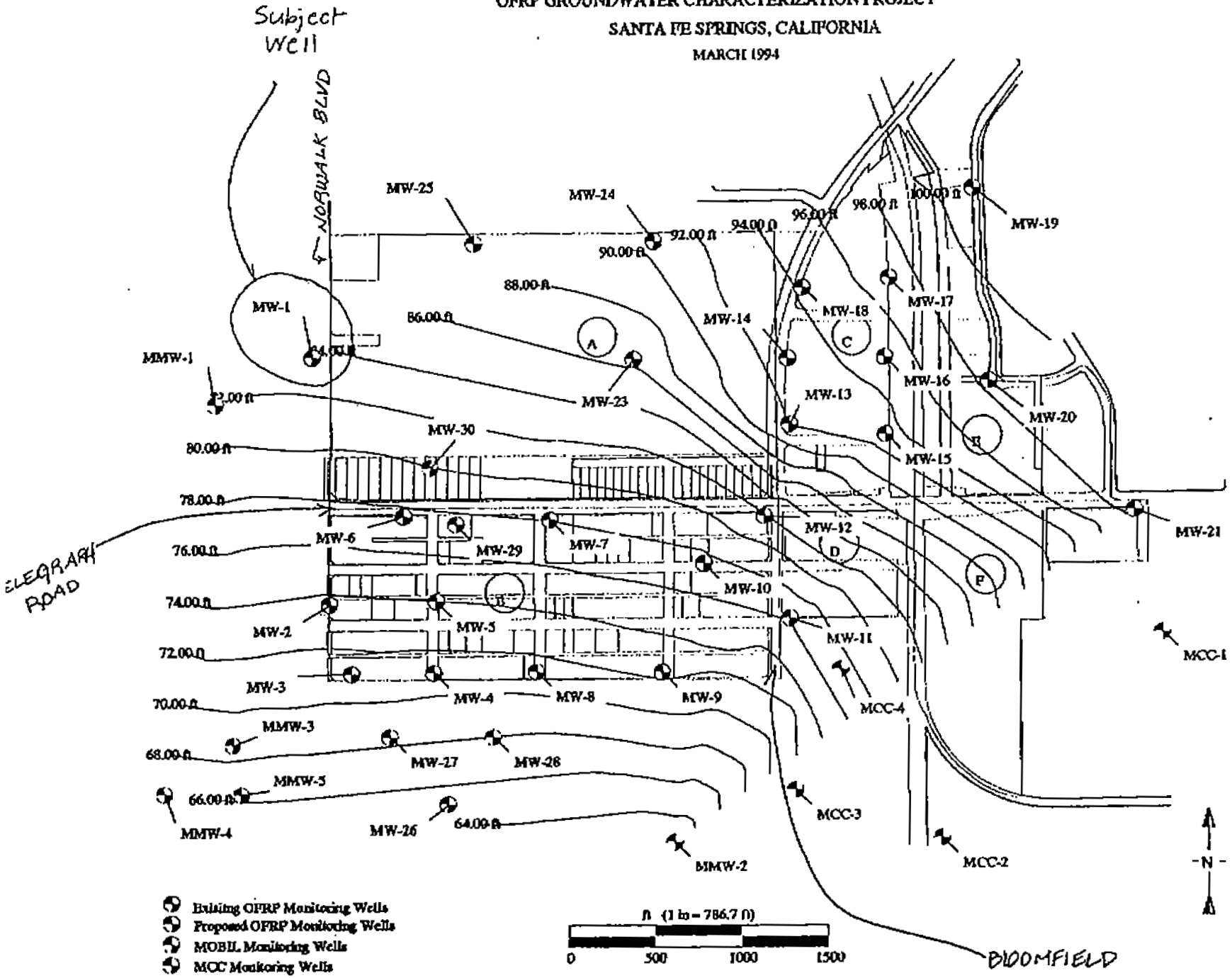


GROUNDWATER ELEVATION CONTOUR MAP

OFRP GROUNDWATER CHARACTERIZATION PROJECT

SANTA FE SPRINGS, CALIFORNIA

MARCH 1994



SUMMARY OF GROUNDWATER MONITORING WELL CONSTRUCTION DETAILS
AND GROUNDWATER ELEVATION DATA
OFRP GROUNDWATER CHARACTERIZATION PROJECT
SANTA FE SPRINGS, CALIFORNIA

Monitoring Well Designation	Top of Casing Elevation	Screened Interval (ft. below grade	Date of Measurement	Total Depth	Depth to Groundwater	Groundwater Elevation (ft. above Mean Sea Level)
MW-1	142.32	55-100	2/2/94 3/1/94	98.45 98.88	59.17 58.77	83.15 83.55

Total Petroleum Hydrocarbon (TPH)
Groundwater Analytical Results in parts per million (ppm)
EPA Method 8015 Modified
Oil Field Reclamation Project
Santa Fe Springs, California
March 1994

Monitoring Well ID	Kerosene	TPH	Gasoline Range	Diesel Range
MW-1	0	0	0	0

Soil Physical Parameter Analytical Results
Oil Field Reclamation Project
Santa Fe Springs, California
March 1994

Monitor Well Designation	Sample Depth Interval (ft)	Lithologic Description and Unified Soil Classification	Hydraulic Conductivity (ft/sec)	Effective Porosity (dimensionless)	Average Moisture Content (dimensionless)	Dry Bulk Density (g/cm^3)	Natural Bulk Density (g/cm^3)	Total Organic Carbon Content (dimensionless)
MW-1	–	–	–	27.3	16.2	–	–	–

California Assessment Manual (CAM) Title 22 Metal Total Threshold Limit Concentration (TTLC)
Groundwater Analytical Results in parts per billion (ppb)
EPA Method 6010/7000 Series
Oil Field Reclamation Project
Santa Fe Springs, Califor

Monitoring Well ID	Arsenic	Barium	Chromium	Zinc	Copper	Lead	Nickel	Vanadium	Selenium
MW-1	0	40	41	0	0	0	0	0	0

Semivolatile Organic Compound (SVOC)
Groundwater Analytical Results in parts per billion (ppb)
EPA Method 625
Oil Field Reclamation Project
Santa Fe Springs, California
March 1994

Monitoring Well ID	Dimethyl-phthalate	2,4-Dimethyl-phenol	2-Methyl-naphthalene	Phenol	2-Methyl-phenol	Naphthalene	Bis(2-Ethlyhexyl) phthalate
MW-1	62	0	0	0	0	0	0

Volatile Organic Compound (VOC)
Groundwater Analytical Results in parts per billion (ppb)
EPA Method 624
Oil Field Reclamation Project
Santa Fe Springs, California
March 1994

Monitoring Well ID	TCE	Acetone	1,1-DCE	Methylene Chloride	1,1-DCA	Cis-1,2-DCE	1,1,1-TCA	PCE	Vinyl Chloride	Chloroform	Bromodichloro methane	Dibrome chloromethane
MW-1	15	0	0	0	0	0	0	20	0	0	0	0

Benzene, Toluene, Ethylbenzene, and Xylene
Groundwater Analytical Results
In parts per billion (ppb)
Oil Field Reclamation Project
Santa Fe Springs, California
March 1994

Monitoring Well ID	Benzene	Toluene	Ethylbenzene	M & P Xylene	O-Xylene
MW-1	0	5	14	34	11

APPENDIX D

Table I
October 31 - November 1, 1994 Results

Table IA
Off-Site Sample Results

and
Laboratory Analytical Reports

Table I
October 31 - November 1, 1994 Results

Sample Identification	Depth (ft)	Number of Discrete Samples	Number of Composite Samples	Analysis[1]					
				418.1	7420	8020(ppb)			
						B	T	X	E
Composite A	S	3	1	1,250	197	ND	ND	ND	ND
Composite B	S	3	1	720	72	ND	6.9	ND	ND
Composite C	1	3	1	910	1,054	ND	ND	ND	ND
Composite D	1	3	1	480	88	ND	ND	ND	ND
Composite E	2	3	1	460	56	ND	5.4	ND	ND
Composite F	2	3	1	900	70	ND	ND	ND	ND
Composite G	3	3	1	800	82	ND	ND	ND	ND
Composite H	4	3	1	387	172	ND	ND	ND	ND
Composite I	4	3	1	120	223	ND	ND	ND	ND
Composite J	3	3	1	102	33	ND	ND	ND	ND
Composite K	4	3	1	1,920	77	ND	ND	ND	ND
Composite L	S	3	1	77	316	ND	ND	ND	ND
Composite M	2	3	1	154	109	ND	ND	ND	ND
Composite N	1	3	1	16	4.5	ND	ND	ND	ND
Composite O	3	3	1	168	31	ND	ND	ND	ND
A2-5	5	1	NA	226	21	ND	ND	ND	ND
A8-5	5	1	NA	14	ND	ND	ND	ND	ND
C20-5	5	1	NA	118	20	ND	ND	ND	ND
D10-5	5	1	NA	12	ND	ND	ND	ND	ND
C5-5	5	1	NA	1,760	44	ND	ND	ND	ND
I3-5	5	1	NA	288	75	ND	ND	ND	ND
F16-5	5	1	NA	8.8	ND	ND	ND	ND	ND
G13-5	5	1	NA	7.2	ND	ND	ND	ND	ND
F6-5	5	1	NA	7.2	ND	ND	ND	ND	N

Table I, cont
October 31 - November 1, 1994 Results

Sample Identification	Depth (ft)	Number of Discrete Samples	Number of Composite Samples	Analysis[1]					
				418.1	7420	8020(ppb)			
						B	T	X	E
A19-5	5	1	NA	NA	ND	ND	ND	ND	ND

[1] All results are in parts per million, unless stated otherwise
ft = feet
418.1 = Total Recoverable Petroleum Hydrocarbons
7420 = Total lead
8020 = Benzene (B), toluene (T), xylenes (X), ethylbenzene (E)
ppb = parts per billion
S = Surface Sample
ND = Not Detected
NA = Not Analyzed

Table IA
Off-Site Sample Results[1]

Sample Identification	CCR Metals[2]	Analysis				
			8020 (ppb)			
		8015	B	T	X	E
K5-45	BTL	NA	NA	NA	NA	NA
K5-E45	Pb @ 210	NA	NA	NA	NA	NA
USC	BTL	12	ND	6.8	120	50

[1] All results are in parts per million, unless stated otherwise
[2] Only those results which exceed 10x the STLC action limit are reported
ppb = parts per billion
8020 = Benzene (B), toluene (T), xylenes (X), and ethylbenzene (E)
8015 = Total Fuel Petroleum Hydrocarbon - gasoline
BTL = Below Threshold Limits
Pb = Lead
NA = Not Analyzed
ND = Not Detected

Advanced Technology
Laboratories

November 10, 1994

ELAP No.: 1838
Exp. Date: 12-31-94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project #: Atlas Radiator
Lab No.: 941103-141/198

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Composite A includes B18-S, A4-S, B10-S
Composite B includes C2-S, E20-S, D13-S
Composite C includes E7-1, D17-1, C4-1
Composite D includes A6-1, B3-1, B14-1
Composite E includes E2-2A, B16-2, C10-2
Composite F includes A20-2, B6-2, A10-2
Composite G includes A17-3A, B12-3A, A5-3
Composite H includes B20-4, A16-4, B8-4
Composite I includes C19-4, C12-4, D5-4
Composite J includes B4-3, B20-3, C6-3
Composite K includes I10-4, G13-4, F9-4
Composite L includes E5-S, H19-S, H9-S
Composite M includes G2-2, E14-2, I17-2
Composite N includes E12-1, F20-1, H5-1
Composite O includes E2-3, H16-3, G6-3

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Michael A. Yartzoff
Laboratory Director
MAY/ra

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator

Date Received: 11/03/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results	Matrix, Units	DLR	DF	Analyst Initials
941103-Comp A	Composite A	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	1250	Soil, mg/kg	100	25	MCC/DFC
941103-Comp B	Composite B	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	720	Soil, mg/kg	100	25	MCC/DFC
941103-Comp C	Composite C	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	910	Soil, mg/kg	100	25	MCC/DFC
941103-Comp D	Composite D	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	480	Soil, mg/kg	100	25	MCC/DFC
941103-Comp E	Composite E	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	460	Soil, mg/kg	100	25	MCC/DFC
941103-Comp F	Composite F	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	900	Soil, mg/kg	100	25	MCC/DFC
941103-Comp G	Composite G	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	800	Soil, mg/kg	100	25	MCC/DFC
941103-Comp H	Composite H	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	387	Soil, mg/kg	67	17	MCC/DFC
941103-Comp I	Composite I	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	120	Soil, mg/kg	20	5	MCC/DFC
941103-Comp J	Composite J	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	102	Soil, mg/kg	20	5	MCC/DFC
941103-Comp K	Composite K	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	1920	Soil, mg/kg	100	25	MCC/DFC
941103-Comp L	Composite L	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	77	Soil, mg/kg	4	1	MCC/DFC
941103-Comp M	Composite M	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	154	Soil, mg/kg	20	5	MCC/DFC
941103-Comp N	Composite N	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	16	Soil, mg/kg	4	1	MCC/DFC
941103-Comp O	Composite O	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	168	Soil, mg/kg	20	5	MCC/DFC
941103-169	A2-5	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	226	Soil, mg/kg	20	5	MCC/DFC
941103-152	USC	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	16000	Soil, mg/kg	2000	500	MCC/DFC
941103-170	A8-5	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	14	Soil, mg/kg	4	1	MCC/DFC
941103-171	C20-5	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	118	Soil, mg/kg	20	5	MCC/DFC
941103-172	D10-5	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	12	Soil, mg/kg	4	1	MCC/DFC
941103-173	C5-5	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	1760	Soil, mg/kg	200	50	MCC/DFC
941103-183	I3-5	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	288	Soil, mg/kg	20	5	MCC/DFC
941103-184	F16-5	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	8.8	Soil, mg/kg	4	1	MCC/DFC
941103-185	G13-5	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	7.2	Soil, mg/kg	4	1	MCC/DFC
941103-186	F6-5	EPA 418.1 (TRPH)	10/31-11/01-94	11/10/94	7.2	Soil, mg/kg	4	1	MCC/DFC

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL X Dilution Factor
DF = Dilution Factor

Reviewed by Supervisor: _____

Reviewed/Approved By: _____
Michael A. Yartzoff
Laboratory Director

Date: 11/11/94

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator

Date Received: 11/03/94
Date Digested: 11/10/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results	Matrix, Units	DLR	DF	Analyst Initials
941103-168	A19-5	EPA 7420 (Lead)	11/01/94	11/10/94	ND	Soil, mg/kg	2.4	1	CDR
941103-169	A2-5	EPA 7420 (Lead)	11/01/94	11/10/94	21	Soil, mg/kg	2.4	1	CDR
941103-170	A8-5	EPA 7420 (Lead)	11/01/94	11/10/94	ND	Soil, mg/kg	2.4	1	CDR
941103-171	C20-5	EPA 7420 (Lead)	10/31/94	11/10/94	20	Soil, mg/kg	2.4	1	CDR
941103-172	D10-5	EPA 7420 (Lead)	10/31/94	11/10/94	ND	Soil, mg/kg	2.4	1	CDR
941103-173	C5-5	EPA 7420 (Lead)	10/31/94	11/10/94	44	Soil, mg/kg	2.4	1	CDR
941103-183	I3-5	EPA 7420 (Lead)	10/31/94	11/10/94	75	Soil, mg/kg	2.4	1	CDR
941103-184	F-16-5	EPA 7420 (Lead)	10/31/94	11/10/94	ND	Soil, mg/kg	2.4	1	CDR
941103-185	G13-5	EPA 7420 (Lead)	10/31/94	11/10/94	ND	Soil, mg/kg	2.4	1	CDR
941103-186	F6-5	EPA 7420 (Lead)	10/31/94	11/10/94	ND	Soil, mg/kg	2.4	1	CDR
941103-Comp A	Composite A	EPA 7420 (Lead)	11/01/94	11/10/94	197	Soil, mg/kg	2.4	1	CDR
941103-Comp B	Composite B	EPA 7420 (Lead)	11/01/94	11/10/94	72	Soil, mg/kg	2.4	1	CDR
941103-Comp C	Composite C	EPA 7420 (Lead)	11/01/94	11/10/94	1054	Soil, mg/kg	4.8	2	CDR
941103-Comp D	Composite D	EPA 7420 (Lead)	11/01/94	11/10/94	88	Soil, mg/kg	2.4	1	CDR
941103-Comp E	Composite E	EPA 7420 (Lead)	11/01/94	11/10/94	56	Soil, mg/kg	2.4	1	CDR
941103-Comp F	Composite F	EPA 7420 (Lead)	11/01/94	11/10/94	70	Soil, mg/kg	2.4	1	CDR
941103-Comp G	Composite G	EPA 7420 (Lead)	11/01/94	11/10/94	82	Soil, mg/kg	2.4	1	CDR
941103-Comp H	Composite H	EPA 7420 (Lead)	11/01/94	11/10/94	172	Soil, mg/kg	2.4	1	CDR
941103-Comp I	Composite I	EPA 7420 (Lead)	10/31/94	11/10/94	223	Soil, mg/kg	2.4	1	CDR
941103-Comp J	Composite J	EPA 7420 (Lead)	10/31/94	11/10/94	33	Soil, mg/kg	2.4	1	CDR
941103-Comp K	Composite K	EPA 7420 (Lead)	10/31/94	11/10/94	77	Soil, mg/kg	2.4	1	CDR
941103-Comp L	Composite L	EPA 7420 (Lead)	10/31/94	11/10/94	316	Soil, mg/kg	2.4	1	CDR
941103-Comp M	Composite M	EPA 7420 (Lead)	10/31/94	11/10/94	109	Soil, mg/kg	2.4	1	CDR
941103-Comp N	Composite N	EPA 7420 (Lead)	10/31/94	11/10/94	4.5	Soil, mg/kg	2.4	1	CDR
941103-Comp O	Composite O	EPA 7420 (Lead)	10/31/94	11/10/94	31	Soil, mg/kg	2.4	1	CDR

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL X Dilution Factor
DF = Dilution Factor

Reviewed by Supervisor: _____

Reviewed/Approved By: Michael A. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 11/10/94

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Date Sampled: 10/31-11/01/94
Date Received: 11/03/94
Date Analyzed: 11/09/94

Client's Project: Atlas Radiator

Matrix: Soil
Analyst Initials: RR

BTEX

Lab No.:	Sample ID:	Benzene		Toluene		Ethylbenzene		Xylenes (total)		Dilution
		Results, ug/kg	DLR, ug/kg	Results, ug/kg	DLR, ug/kg	Results, ug/kg	DLR, ug/kg	Results, ug/kg	DLR, ug/kg	Factor
941103-Comp "O"	Composite O	ND	5	ND	5	ND	5	ND	5	1
941103-168	A19-5	ND	5	ND	5	ND	5	ND	5	1
'103-169	A2-5	ND	5	ND	5	ND	5	ND	5	1
941103-170	A8-5	ND	5	ND	5	ND	5	ND	5	1
941103-171	C20-5	ND	5	ND	5	ND	5	ND	5	1
941103-172	D10-5	ND	5	ND	5	ND	5	ND	5	1
941103-173	C5-5	ND	5	ND	5	ND	5	ND	5	1
941103-183	I3-5	ND	5	ND	5	ND	5	ND	5	1
941103-184	F-16-5	ND	5	ND	5	ND	5	ND	5	1
941103-185	G13-5	ND	5	ND	5	ND	5	ND	5	1
941103-186	F6-5	ND	5	ND	5	ND	5	ND	5	1

DL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Dilution Factor
Reviewed by Supervisor: _____

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 11-14-94

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Date Sampled: 10/31-11/01/94
Date Received: 11/03/94
Date Analyzed: 11/09/94

Client's Project: Atlas Radiator

Matrix: Soil
Analyst Initials: RR

BTEX

Lab No.:	Sample ID:	Benzene		Toluene		Ethylbenzene		Xylenes (total)		Dilution
		Results, ug/kg	DLR, ug/kg	Results, ug/kg	DLR, ug/kg	Results, ug/kg	DLR, ug/kg	Results, ug/kg	DLR, ug/kg	Factor
Method Blank	NA	ND	5	ND	5	ND	5	ND	5	1
941103-Comp "A"	Composite A	ND	5	ND	5	ND	5	ND	5	1
103-Comp "B"	Composite B	ND	5	6.9	5	ND	5	ND	5	1
941103-Comp "C"	Composite C	ND	5	ND	5	ND	5	ND	5	1
941103-Comp "D"	Composite D	ND	5	ND	5	ND	5	ND	5	1
941103-Comp "E"	Composite E	ND	5	5.4	5	ND	5	ND	5	1
941103-Comp "F"	Composite F	ND	5	ND	5	ND	5	ND	5	1
941103-Comp "G"	Composite G	ND	5	ND	5	ND	5	ND	5	1
941103-Comp "H"	Composite H	ND	5	ND	5	ND	5	ND	5	1
941103-Comp "I"	Composite I	ND	5	ND	5	ND	5	ND	5	1
941103-Comp "J"	Composite J	ND	5	ND	5	ND	5	ND	5	1
941103-Comp "K"	Composite K	ND	5	ND	5	ND	5	ND	5	1
941103-Comp "L"	Composite L	ND	5	ND	5	ND	5	ND	5	1
941103-Comp "M"	Composite M	ND	5	ND	5	ND	5	ND	5	1
1103-Comp "N"	Composite N	ND	5	ND	5	ND	5	ND	5	1

DL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Dilution Factor

Reviewed by Supervisor: [signature]

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 11-10-94

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Date Sampled: 11/01/94
Date Received: 11/03/94
Date Analyzed: 11/10/94

Client's Project: Atlas Radiator
Matrix: Soil

METHOD 8015M/BTEX

Lab No.:	Sample ID:	8015M		BTEX								Dilution Factor
		TPH (Gas)		Benzene		Toluene		Ethylbenzene		Xylenes (total)		
		Results, mg/kg	DLR, mg/kg	Results, ug/kg	DLR, ug/kg	Results, ug/kg	DLR, ug/kg	Results, ug/kg	DLR, ug/kg	Results, ug/kg	DLR, ug/kg	
Method Blank	NA	ND	1	ND	5	ND	5	ND	5	ND	5	1
1103-152	USC	12*	1	ND	5	6.8	5	50	5	120	5	1

MDL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Dilution Factor
* = The sample contains compounds in the heavy end of the gasoline range.

Reviewed by Supervisor: (L)

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 11-10-94

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator
Date Received: 11/03/94
Matrix: Soil
Units: mg/kg
Digestion Method: 3050

EPA Method 6010 (CCR Metals)

Lab No.:		941103-150	941103-151	941103-152					
Client Sample I.D.:		K5-45	K5-E45	USC					
Date Sampled:		11/01/94	11/01/94	11/01/94					
Date Digested:		11/10-11/94	11/10-11/94	11/10-11/94					
Date Analyzed:		11/10-11/94	11/10-11/94	11/10-11/94					
Analyst Initials:		CDR	CDR	CDR					
Dilution Factor:		1	1	1					
ANALYTE*	DLR	RESULTS							
Antimony	4	ND	ND	ND					
Arsenic	2	28	ND	ND					
Barium	0.5	79	53	54					
Beryllium	0.5	ND	ND	ND					
Cadmium	0.5	ND	0.56	ND					
Chromium ***	0.5	6.8	7.4	5.0					
Cobalt	0.5	3.5	3.6	5.6					
Copper	0.5	4.6	9.7	8.5					
Lead	1	ND	210	12					
Mercury **	0.50	ND	ND	ND					
Molybdenum	1	ND	ND	ND					
Nickel	1	1.7	5.6	3.7					
Selenium	2	ND	ND	ND					
Silver	0.5	ND	ND	ND					
Thallium	1	ND	ND	ND					
Vanadium	0.5	11	14	14					
Zinc	0.5	18	63	31					

MDL = Method Detection Limit
ND = Not Detected (Below DLR).
DLR = MDL X Dilution Factor

* = Only listed constituents designated with TTLC an STLC under CCR Title 22
** = Analysis by EPA Method 7471, Factor is 2
*** = From Title 22 - If the soluble chromium, as determined by the TCLP set forth in Appendix 1 of Chapter 18 of this division (4), less than 5 mg/l , and the soluble chromium, as determined by the procedure set forth in Appendix II of chapter 11, equals or exceeds 560 mg/l and the waste is not otherwise identified as a RCRA hazardous waste pursuant to section 6626.100, then the waste is a non-RCRA hazardous waste.

Reviewed by Supervisor: _____

Reviewed/Approved By: M. Yartoff
Michael A. Yartoff
Laboratory Director

Date: 11-11-94

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: 418.1
Analyst: MCC/DFC
Data File: 4314-S2

Date: 11/10/94
Sample ID: 941031-191
Matrix: SOIL

ANALYTE	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	DLR
TRPH	mg/Kg	5	5	100	ND	ND	40	40	40	100	100	80 - 120	0	20	4

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 11/11/94

Advanced Technology Laboratories

Spiko Recovery and RPD Summary Report

Method: 7471
Analyst: KS/OL
Data File: 4315 - 4

Date: 11/11/94
Analyte: Mercury
Matrix: Soil

SAMPLE ID	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	DLR
941108-122	mg/kg	2.5	2.5	99	ND	ND	2.5	2.2	2.1	86	82	55 - 120	4	30	0.50
941104-064	mg/kg	2.5	2.5	99	ND	ND	2.5	2.4	2.4	94	97	55 - 120	3	30	0.50

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 11/16/94

Advanced Technology Laboratories

Spike Recovery and RPD Summary Report SOIL (ug/kg)

Method : C:\HPCHEM\5\METHODS\8025EXT.M
Title : EPA M8015 (Gasoline) / EPA 8020 (BTEX)
Last Update : Wed Nov 09 18:22:30 1994
Response via : Initial Calibration

Non-Spiked Sample: V1288.D

	Spike Sample	Spike Duplicate Sample
File ID :	VS1435.D	VS1436.D
Sample :	941104-065 5gms MS BTEX	941104-065 5gms MSD BTEX
Acq Time:	10 Nov 94 04:34 AM	10 Nov 94 05:03 AM

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Benzene	ND	50	51	49	101	98	3	21	66-142
Toluene	ND	50	52	49	102	96	6	21	59-139

Reviewed and Approved by: _____ Date: 11-10-94
Scott Stratton
Organics Supervisor

Spike Recovery and RPD Summary Report - SOIL (ug/kg)

Method : C:\HPCHEM\5\METHODS\8021.M
Title : 8010/8020 & 601/602
Last Update : Wed Nov 09 15:40:42 1994
Response via : Initial Calibration

Non-Spiked Sample: VC1160.D

	Spike Sample	Spike Duplicate Sample
File ID :	VS1191.D	VS1192.D
Sample :	Blank Soil MS BTEX	Blank Soil MSD BTEX
Acq Time:	09 Nov 94 11:45 PM	10 Nov 94 00:21 AM

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Benzene #2	0.0	30	31.6	32.1	105	107	2	21	66-142
Toluene #2	0.0	30	30.5	31.4	102	105	3	21	59-139

Reviewed and Approved by: _____ Date: 11-10-94
Scott Stratton
Organics Supervisor

Spike Recovery and RPD Summary Report

Method: 6010
Analyst: CDR/OL
QA File: 4314 - 1
Data File: 41110 - 1

Date Analyzed: 11/10/94
Date Digested: 11/09/94
Sample ID: 941108 - 014
Matrix: Soil
(Digestion Factor: 100/2)

ANALYTE	UNITS	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	MDL
Antimony	mg/kg	ND	ND	5.0	3.4	3.1	68	62	55 - 120	9	30	4.0
Arsenic	mg/kg	ND	ND	5.0	4.9	5.0	98	100	55 - 120	2	30	2.0
Barium	mg/kg	ND	5.3	5.0	11	9.7	114	88	55 - 120	26	30	0.5
Beryllium	mg/kg	ND	ND	5.0	4.5	4.7	90	94	55 - 120	4	30	0.5
Cadmium	mg/kg	ND	ND	5.0	5.0	5.1	100	102	55 - 120	2	30	0.5
Chromium	mg/kg	ND	1.1	5.0	6.0	6.1	98	100	55 - 120	2	30	0.5
Cobalt	mg/kg	ND	0.37	5.0	5.4	5.4	101	101	55 - 120	0	30	0.5
Copper	mg/kg	ND	0.74	5.0	5.5	5.5	95	95	55 - 120	0	30	0.5
Lead	mg/kg	ND	ND	5.0	4.8	4.8	96	96	55 - 120	0	30	1.0
Molybdenum	mg/kg	ND	ND	5.0	4.6	4.6	92	92	55 - 120	0	30	1.0
Nickel	mg/kg	ND	1.1	5.0	6.1	6.1	100	100	55 - 120	0	30	1.0
Selenium	mg/kg	ND	ND	5.0	4.6	4.8	92	96	55 - 120	4	30	2.0
Silver	mg/kg	ND	ND	5.0	2.6	2.7	52	54	50 - 120	4	30	0.5
Thallium	mg/kg	ND	ND	5.0	4.5	4.4	90	88	55 - 120	0	30	1.0
Vanadium	mg/kg	ND	1.3	5.0	6.0	6.1	94	96	55 - 120	2	30	0.5
Zinc	mg/kg	ND	1.1	5.0	6.2	5.2	102	82	55 - 120	22	30	0.5

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 11/10/94

Advanced Technology Laboratories

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766
Long Beach, CA
90803
(310) 433-5144
FAX (310) 433-6998

P.O. Box 81904
Fairbanks, AK
90708
(907) 479-9555

TURNAROUND TIME: 5 day fax results

P/O

PROJECT NO.: 400342

PROJECT NAME: Atlas Radiator

SAMPLER: (Signature) [signature]

TYPE: Container (Glass, SS, Brass) — Glass circled; Sample Matrix (Soil, Water) — Soil circled

ANALYSIS: 418.1 | 8015M-GA) | CCR Metals - TTLC Pb only | 7020

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	Container	Sample Matrix	418.1	8015M-GA)	CCR Metals - TTLC Pb only	7020							
B18-5	11/1/94	1	composite into 1 sample	X	X	X		X	X							
A4-5	↓	4		↓	↓											
B10-5		35														
C2-5		1	composite into 1 sample			X		X	X							
E20-5		14														
D13-5		0														
E7-1		18	composite into 1 sample			X		X	X							
D17-1		4														
C4-1	↓	5		↓	↓											
	11/1/94			X	X											

TOTAL NUMBER OF CONTAINERS: 9

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	11/3/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk in			[signature]	11/3/94 12:45P

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766, Long Beach, CA 90803 — (310) 433-5144, FAX (310) 433-6998
P.O. Box 81904, Fairbanks, AK 99708 — (907) 479-9555

TURNAROUND TIME: 5 day (can call)

P/O

PROJECT NO.: 100347

PROJECT NAME: Atlas Mediator

SAMPLER: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: Container (Glass, SS, Brass)	TYPE: Sample Matrix (Soil / Water)	ANALYSIS: 8015	ANALYSIS: CAM Metals TTLC	ANALYSIS: TCLP Metals
K5-45	11/1/94			P			X	
K5-E45	↓			P			X	
QSC	11/1/94			G		X	X	X

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	11/3/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Work IN				11/3, 12pm

d:\wp\forms\chaincust 1004

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766
Long Beach, CA
90803
(310) 433-5144
FAX (310) 433-6998

P.O. Box 81904
Fairbanks, AK
90708
(907) 479-9555

TURNAROUND TIME: 5 day for Metals

P/O

PROJECT NO. 400342

PROJECT NAME Atlas Radiator

SAMPLER: (Signature) [signature]

TYPE: Container (Glass, SS, Brass) — Glass circled; Sample Matrix (Soil, Water) — Soil circled

ANALYSIS: 418.1 | 8015M-GAS | CCR Metals-TTLC (Pb only) | 7070

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	Container	Sample Matrix	418.1	8015M-GAS	CCR Metals-TTLC	7070							
A6-1	11/1/94	1330	composite into 1 sample	X	X	X		X	X							
B3-1	↓			↓	↓											
B14-1																
E2-2A		0940	composite into 1 sample			X		X	X							
B16-2																
C10-2																
A20-2		1242	composite into 1 sample			X		X	X							
B6-2																
A10-2	↓			↓	↓											
	11/1/94			X	X											

TOTAL NUMBER OF CONTAINERS 9

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	11/3/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
walk in			[signature]	11/3/94 12:45 P

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766, Long Beach, CA 90803 — (310) 433-5144, FAX (310) 433-6998

P.O. Box 81904, Fairbanks, AK 99708 — (907) 479-9558

TURNAROUND TIME: 5 day for results

P/O

PROJECT NO. 400342

PROJECT NAME: Atlas Radiator

SAMPLER: (Signature) [signature]

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: Container (Glass, SS, Brass)	TYPE: Sample Matrix (Soil, Water)	ANALYSIS: 418.1	ANALYSIS: 8015 M - GAS	ANALYSIS: CCR Metals - TTLC (Pb only)	ANALYSIS: 1020
A17-3A	11/1/94	11	composite into 1 sample	X	X	X		X	X
A12-3A		50							
A5-3		0							
B20-4		1	composite into 1 sample			X		X	
A16-4		0							
B8-4		2							
		7							
A19-5		1				X		X	X
A2-5		0				X		X	X
A8-5	↓	0		↓	↓	X		X	X
	11/1/94	2		X	X				

TOTAL NUMBER OF CONTAINERS: 9

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	11/3/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT: WALK IN		SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature) [signature]	DATE/TIME 11/3/94 1245

d:\wp\forms\chainmst 1094

CHAIN OF CUSTODY

PB only

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766, Long Beach, CA 90803 — (310) 433-5144, FAX (310) 433-6998

P.O. Box 81904, Fairbanks, AK 99708 — (907) 479-9555

TURNAROUND TIME: 5 day for results

P/O

PROJECT NO. 400342

PROJECT NAME: Atlas Radiator

SAMPLER: (Signature) L. Uhr

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: Container (Glass, SS, Brass)	TYPE: Sample Matrix (Soil / Water)	ANALYSIS: 418.1	ANALYSIS: 8015M-GAS	ANALYSIS: CCR Metals - TTLC	ANALYSIS: 1020
C20-5	10/31/94	14		X	X	X		X	X
D10-5		13		X		X		X	X
C5-5		5		X		X		X	X
C19-4		14	composite into 1 sample			X		X	X
C12-4		5				X		X	X
D5-4		5				X		X	X
B4-3		12	composite into 1 sample			X		X	X
B20-3		5				X		X	X
C6-3	↓	3		↓	↓	X		X	X
	10/31/94	10		X	X				

TOTAL NUMBER OF CONTAINERS: 9

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
L. Uhr	11/3/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk in				11/3/94 2:15P

E:\wp\forms\chainout.1004

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766, Long Beach, CA 90003, (310) 433-6144, FAX (310) 433-6999

P.O. Box 61904, Fairbanks, AK 90708, (907) 479-0555

TURNAROUND TIME: 5 day for results

P/O

PROJECT NO.: 400342

PROJECT NAME: Atlas Radiator

SAMPLER: (Signature) [signature]

TYPE: Container (Glass, SS, Brass) — Glass circled; Sample Matrix (Soil, Water) — Soil circled

ANALYSIS: 418.1; 8015M - (G+) (Pb only); CCR Metals - TTLC; 8020

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	Container	Sample Matrix	418.1	8015M - (G+)	CCR Metals - TTLC	8020						
I10-4	10/31/94	10	{ composite into 1 sample }	X	X	X		X	X						
G13-4	↓	0		↓	↓										
F9-4		0													
I3-5		0830				X		X	X						
F16-5		0830				X		X	X						
G13-5		0830				X		X	X						
F6-5		0830				X		X	X						
E5-S		14	{ composite into 1 sample }			X		X	X						
H19-S	↓	3		↓	↓										
H9-S	10/31/94	0		X	X										

TOTAL NUMBER OF CONTAINERS: 10

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	11/3/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk in			[signature]	11/3/94 12:45

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14760
Long Beach, CA
90803
(310) 433-5144
FAX (310) 433-0098

P.O. Box 81904
Fairbanks, AK
90708
(907) 470-9555

TURNAROUND TIME: 5 day
Fax result

P/O

PROJECT NO.: 400 342

PROJECT NAME: Atlas Aviation

SAMPLER: (Signature) [signature]

TYPE: Container (Glass, SS, Brass) — Glass circled; Sample Matrix (Soil, Water) — Soil circled

ANALYSIS: 418.1 | TPH-Gas | CCR Metal TTLC | PCBs

Pb only

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	Container	Sample Matrix	418.1	TPH-Gas	CCR Metal TTLC	PCBs							
G2-2	10/31/94	1	Composite into 1 sample	X	X	X		X	X							
E14-2		2														
I7-2		4 / 2														
E12-1		1	Composite into 1 sample			X		X	X							
F20-1		3														
H5-1		2 / 8														
E2-3		1	Composite into 1 sample			X		X	X							
H16-3		1 / 4														
G6-3	↓	5		↓	↓											
	10/31/94															

TOTAL NUMBER OF CONTAINERS: 9

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk in			[signature]	11/3/94 12:46

Table II
Asphalt vs. Soil Lead Analysis

and
Laboratory Analytical Reports

Table II
Asphalt vs. Soil Lead Analysis

Sample Identification	Material Type	Analysis (ppm)		
			7420	
		418.1	Soil	Asphalt
Composite A	Soil/Asphalt	1,230	95	42
Composite C	Soil/Asphalt	NA	248	83
Composite D	Soil/Asphalt	NA	95	25
Composite G	Soil/Asphalt	NA	106	64
Composite H	Soil/Asphalt	NA	154	49
Composite I	Soil/Asphalt	NA	395	50
Composite K	Soil/Asphalt	1,00	132	22
Composite L	Soil/Asphalt	NA	56	42
Composite M	Soil/Asphalt	NA	104	113
C5-5	Soil	1,080	NA	NA

ppm = parts per million
NA = Not Analyzed
418.1 = Total Recoverable Petroleum Hydrocarbons
7420 = Total lead

Advanced Technology
Laboratories

RECEIVED
NOV 28 1994
A. P. E. E.

ELAP No.: 1838
Exp. Date: 12-31-94

Alaska Petroleum Environmental Engineering
P. O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400342
Lab No.: 941103-141/198

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

The sample(s) arrived chilled, intact, with a chain of custody record attached.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

ALASKA PETROLEUM
ENVIRONMENTAL
ENGINEERING

MEMORANDUM
(via facsimile)

Date: November 15, 1994

To: Maria/Maribel - Advanced Technology Laboratory, Inc.

From: R. Glenn Stillman

Re: Atlas Radiator

P.O.#: 400342

As per my conversation with Mike Yartzoff, please re-analyze the following samples on a 24 hour priority rush TAT; all samples are to be sieved prior to analysis (200 mesh) to remove any asphalt pieces. Fax results, Thanks.

Lab No.	Sample ID	Analysis (TRPH and lead); Material Type
941103-Comp A	Composite A	418.1 on soil; 7420 on soil and asphalt chunks
941103-Comp C	Composite C	7420 on soil and asphalt chunks
941103-Comp D	Composite D	7420 on soil and asphalt chunks
941103-Comp G	Composite G	7420 on soil and asphalt chunks
941103-Comp H	Composite H	7420 on soil and asphalt chunks
941103-Comp I	Composite I	7420 on soil and asphalt chunks
941103-Comp K	Composite K	418.1 on soil; 7420 on soil and asphalt chunks
941103-Comp L	Composite L	7420 on soil and asphalt chunks
941103-Comp M	Composite M	7420 on soil and asphalt chunks
941103-173	C5-5	418.1 on soil

Alaska Office
907•479-9555
P.O. Box 81904
Fairbanks, Alaska 99708

California Office
310•433-5144
FAX 310•433-6998
P.O. Box 14766
Long Beach, California 90803

Client:	Alaska Petroleum Environmental Engineering	Lab No. :	See Below
Attn:	Mr. Glenn Stillman	Date Digested:	11/16/94
		Date Analyzed:	11/16/94
Project:	Atlas Radiator, 400342		
Matrix:	Soil (< 20 mesh)		

EPA Method 7420 (Lead)				
Lab No.	Sample ID	Results, mg/kg	DLR, mg/kg	Factor
941103-Comp A	Comp A	95	2.4	1
941103-Comp C	Comp C	248	2.4	1
941103-Comp D	Comp D	95	2.4	1
941103-Comp G	Comp G	106	2.4	1
941103-Comp H	Comp H	154	2.4	1
941103-Comp I	Comp I	395	2.4	1
941103-Comp K	Comp K	132	2.4	1
941103-Comp L	Comp L	56	2.4	1
941103-Comp M	Comp M	104	2.4	1
941103-173	C5 – 5	6.1	2.4	1

MDL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Factor

Reviewed/Approved By: _____ Date: 11/22/94

Michael A. Yartzoff
Laboratory Director

The cover letter is an integral part of this analytical report.

Client: Alaska Petroleum Environmental Engineering

Attn: Mr. Glenn Stilllman

Lab No. : See Below

Date Digested: 11/16/94

Date Analyzed: 11/16/94

Project: Atlas Radiator, 400342

Matrix: Asphalt like material (> 20 mesh)

EPA Method 7420
(Lead)

Lab No.	Sample ID	Results, mg/kg	DLR, mg/kg	Factor
Asphalt-Comp A	Comp A	42	2.4	1
Asphalt-Comp C	Comp C	83	2.4	1
Asphalt-Comp D	Comp D	25	2.4	1
Asphalt-Comp G	Comp G	64	2.4	1
Asphalt-Comp H	Comp H	49	2.4	1
Asphalt-Comp I	Comp I	50	2.4	1
Asphalt-Comp K	Comp K	22	2.4	1
Asphalt-Comp L	Comp L	42	2.4	1
Asphalt-Comp M	Comp M	113	2.4	1
Asphalt-173	C5-5	12	2.4	1

MDL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Factor

Reviewed/Approved By: _____ Date: 11/16/94

Michael A. Yartzoff
Laboratory Director

The cover letter is an integral part of this analytical report.

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400342

Date Received: 11/03/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	DLR	DF	Analyst Initials
941103-173	C5-5	EPA 418.1 (TRPH)	10/31/94	11/16/94	1080	Soil, mg/kg	100	25	DFC/MCC
941103-Comp A	Comp A	EPA 418.1 (TRPH)	11/01/94	11/16/94	1230	Soil, mg/kg	100	25	DFC/MCC
941103-Comp K	Comp K	EPA 418.1 (TRPH)	10/31/94	11/16/94	1020	Soil, mg/kg	100	25	DFC/MCC

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL X Dilution Factor
DF = Dilution Factor

Reviewed/Approved By: _____
Michael A. Yartzoff
Laboratory Director

Date: 11/16/94

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: 418.1
Analyst: MCC
Data File: 4318-S

Date: 11/14/94
Sample ID: 941109-113
Matrix: SOIL

ANALYTE	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	DLR
TRPH	mg/Kg	5	5	100	ND	ND	40	40	41	100	103	80 - 120	3	20	4

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 11/16/94

Advanced Technology Laboratories

Spike Recovery and RPD Summary Report

Method: 7420
Analyst: KS/OL
Data File: 4320 - 1

Date Analyzed: 11/16/94
Date Digested: 11/16/94
Sample ID: 941103 - 173 ms/msd
Matrix: Soil
(Digestion Factor: 100/2)

ANALYTE	UNITS	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	DLR
Lead	mg/kg	ND	1.2	5.0	5.8	6.0	91	95	55 - 120	5	30	2.4

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 11/16/94

Advanced Technology Laboratories

CHAIN OF CUSTODY

Batch # 4879 Y/g

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14705
Long Beach, CA
90803
(310) 433-5144
FAX (310) 433-6898

P.O. Box 81904
Fairbanks, AK
99708
(907) 479-9565

TURNAROUND TIME: 5 day fax results

P/O.

PROJECT NO.: 400342

PROJECT NAME: Atlas Radiator

SAMPLER: (Signature) [signature]

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	Container (Glass, SS, Brass)	Sample Matrix (Soil, Water)	418.1	8015 M - GAS	CCR Metals - TTLC PB only	8020 BTEX	ANALYSIS					
B18-5	11/1/94	1	composite into 1 sample (A)	X	X	X		X	X	941103-141					
A4-5	↓	4								-142					
B10-5		35								-143					
C2-5		1	composite into 1 sample (B)			X		X	X	-144					
E20-5		4								-145					
D13-5		0								-146					
E7-1		8	composite into 1 sample (C)			X		X	X	-147					
D17-1		4								-148					
C4-1	↓	5		↓	↓					-149					
	11/1/94			X	X										

TOTAL NUMBER OF CONTAINERS: 9

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	11/3/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk in			[signature]	11/3/94 12:45

CHAIN OF CUSTODY

2/9

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766
Long Beach, CA 90803
(310) 433-6144
FAX (310) 433-6900

P.O. Box 81904
Fairbanks, AK 99708
(907) 479-9565

TURNAROUND TIME: 5 day for results

P/O

PROJECT NO.: 400342

PROJECT NAME: Atlas Radiator

SAMPLER: (Signature) [signature]

ANALYSIS: [illegible] | CCR Metals TTLC | PCB/Organic Compounds

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	Container (Glass, SS, Brass)	Sample Matrix (Soil / Water)	[illegible]	CCR Metals TTLC	PCB/Organic Compounds								
KS-4S	11/1/94			P			X		941103-150							
KS-E4S	↓			P			X		-151							
DSC	11/1/94			G		X	X	X	-152							

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	11/3/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT: Walk in		SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature) [signature]	DATE/TIME 11/3, 12PM

CHAIN OF CUSTODY

3/

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766
Long Beach, CA
90803
(310) 433-5144
FAX (310) 433-6998

P.O. Box 81604
Fairbanks, AK
90708
(907) 479-9556

TURNAROUND TIME: 5 day for Multi

P/O

PROJECT NO. 40034.2

PROJECT NAME Atlas Radiator

SAMPLER: (Signature) [signature]

TYPE: Container (Glass, SS, Brass); Sample Matrix (Soil, Water)

ANALYSIS: 418.1; 8015M - GAS; CCR Metals - TTLC (Pb only); 8020 BTEX

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	Container	Sample Matrix	418.1	8015M - GAS	CCR Metals - TTLC	8020 BTEX								
A6-1	11/1/94		composite into 1 sample (D)	X	X	X		X	X	941103-153							
B3-1		30								- 154							
B14-1		30								- 155							
E2-2A		0	composite into 1 sample (E)			X		X	X	- 156							
B16-2		9								- 157							
C10-2		40								- 158							
A20-2		1	composite into 1 sample (F)			X		X	X	- 159							
B6-2		2								- 160							
A10-2		41								- 161							
	11/1/94			X	X												

TOTAL NUMBER OF CONTAINERS: 9

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	11/3/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk in			[signature]	11/3/94 12:45 P

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766
Long Beach, CA
90803
(310) 433-5144
FAX (310) 433-6998

P.O. Box 81904
Fairbanks, AK
99708
(907) 479-0555

TURNAROUND TIME: 5 day for results

P/O

PROJECT NO.: 10034.2

PROJECT NAME: Atlas Radiator

SAMPLER: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: Container (Glass, SS, Brass)	TYPE: Sample Matrix (Soil) Water)	ANALYSIS: 418.1	ANALYSIS: 8015M - GAS	ANALYSIS: CCR Metals - TTLC	ANALYSIS: 8020 BTEX
A17-3A	11/1/94	11		X	X	X			X
B12-3A		5	composite into 1 sample (G)						
		0							
A5-3									
B20-4		1							
		0							
A16-4		2	composite into 1 sample (H)						
B8-4		7							
A19-5		1				X		X	X
		0							
A2-5		0				X		X	X
A8-5		2				X		X	X
	11/1/94			X	X				

941103-162
163
164
165
166
167
168
169
170

TOTAL NUMBER OF CONTAINERS: 9

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	11/3/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT: WALK IN		SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME: 11/3/94 12:41

CHAIN OF CUSTODY

PB only

5/97

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14786, Long Beach, CA 90803, (310) 433-5144, FAX (310) 433-6998

P.O. Box 81904, Fairbanks, AK 99708, (907) 479-0555

TURNAROUND TIME: 5 day for results

P/O

PROJECT NO.: 400342

PROJECT NAME: Atlas Radiator

SAMPLER: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: Container (Glass, SS, Brass)	TYPE: Sample Matrix (Soil, Water)	ANALYSIS: 418.1	ANALYSIS: 8015M - GAS	ANALYSIS: CCR Metals - TTLC	ANALYSIS: 602 & BTEX	ANALYSIS: 941103-
C20-5	10/31/94	14		X	X	X		X	X	172
D10-5		13		X	X	X		X	X	173
B5-5		5		X	X	X		X	X	174
C19-4		14								175
C12-4		15	composite into 1 sample (1)							176
D5-4		5								177
B4-3		12								178
B20-3		5	composite into 1 sample (5)							179
C6-3		3								
		0								
	10/31/94			X	X					

TOTAL NUMBER OF CONTAINERS: 9

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	11/3/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Work IO				11/3/94 2:45

6/7

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766
Long Beach, CA
90803
(310) 433-5144
FAX (310) 433-6998

P.O. Box 81904
Fairbanks, AK
99708
(907) 479-9556

TURNAROUND TIME: 5 day for results

P/O

PROJECT NO.: 400342

PROJECT NAME: Atlas Radiator

SAMPLER: (Signature) [signature]

TYPE: Container (Glass, SS, Brass) — Glass circled; Sample Matrix (Soil, Water) — Soil circled

ANALYSIS: 418.1; 8015M-GAS; CCR Metals-TTLC (Pb only); 8020 BTEX

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	Container	Sample Matrix	418.1	8015M-GAS	CCR Metals-TTLC	8020 BTEX	Lab No.
I10-4	10/31/94	10	composite into 1 sample (K)	X	X	X		X	X	941103-180
G13-4		0								-181
F9-4		0								-182
E3-5		0830				X		X	X	-183
F16-5		0830				X		X	X	-184
G13-5		0830				X		X	X	-185
F6-5		0830				X		X	X	-186
E5-5		1	composite into 1 sample (L)			X		X	X	-187
H19-5		3								-188
H9-5	10/31/94	0		X	X					-189

TOTAL NUMBER OF CONTAINERS: 10

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	11/3/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk in			[signature]	11/3/94

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING
P.O. Box 14766 Long Beach, CA 90803 (310) 433-5144 FAX (310) 433-6000
P.O. Box 81904 Fairbanks, AK 99708 (907) 479-5555

TURNAROUND TIME: 5 day Fax multi

P/O

PROJECT NO.: 400 342

PROJECT NAME: Atlas [illegible]

SAMPLER: (Signature) [signature]

TYPE: Container (Glass, SS, Brass) — Glass circled; Sample Matrix (Soil, Water) — Soil circled

ANALYSIS: UIBII; FUIT for Gas; CCR Metal TTLC; PB20 BTEX; Bond

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	Container	Sample Matrix	UIBII	FUIT for Gas	CCR Metal TTLC	PB20 BTEX							
G2-2	10/31/94	1	composite into 1 sample (M)	X	X	X		X	X	941103-190						
E14-2		2				X		X	X	191						
I7-2		42				X		X	X	192						
E2-1		1	composite into 1 sample (N)			X		X	X	193						
F20-1		3				X		X	X	194						
H5-1		28				X		X	X	195						
E2-3		1	composite into 1 sample (O)			X		X	X	196						
A16-3		1				X		X	X	197						
G6-3		5				X		X	X	198						
	10/31/94															

TOTAL NUMBER OF CONTAINERS: 9

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT: walk in		SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature) [signature]	DATE/TIME 11/3/94 12

Table III
Parking Lot Soil Analysis

and
Laboratory Analytical Reports

Table III
Parking Lot Soil Analysis

Sample Identification	Depth (ft)	Number of Discrete Samples	Analysis[1]			
			418.1	7420	8020(ppb)	CCR Metals
K16-3.5	3.5	1	130	34	ND	BTL
J21-.35	3.5	1	248	279	ND	Pb
L12-3.5	3.5	1	480	120	ND	Pb
K9-3.5	3.5	1	284	73	ND	Pb
M23-3.5	3.5	1	775	338	ND	Pb
J2-3.5	3.5	1	78	8.5	ND	BTL
M5-3.5	3.5	1	405	277	ND	Pb
Composite 1	S	4	150	70	ND	Pb
Composite 2	1P	4	90	3.1	ND	NA
Composite 3	1P	4	35	ND	ND	NA
Composite 4	1P	4	36	6.5	ND	NA

[1] All results are in parts per million, unless stated otherwise

ft = feet
418.1 = Total Recoverable Petroleum Hydrocarbons
7420 = Total lead
8020 = Benzene, toluene, ethylbenzene, and xylenes
ppb = parts per billion
CCR Metals = Only those results which exceed 10 x the STLC action limits are reported
ND = Not Detected
BTL = Below Threshold Limits
Pb = Lead
S = Surface grade
1P = 1 foot above surface grade
NA = Not Analyzed

Advanced Technology Laboratories

RECEIVED
NOV 1 - 1994

November 10, 1994

ELAP No.: 1838
Exp. Date: 12-31-94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project #: Atlas Radiator
Lab No.: 941107-213/234

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Michael A. Yartzoff
Laboratory Director
MAY/ra

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator

Date Received: 11/07/94
Date Digested: 11/10/94
Date Amended: 11/11/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results	Matrix, Units	DLR	DF	Analyst Initials
941107-213	K16-3.5	EPA 6010 (Lead)	11/04/94	11/10/94	34	Soil, mg/kg	1	1	CDR
941107-214	J21-3.5	EPA 6010 (Lead)	11/04/94	11/10/94	279	Soil, mg/kg	1	1	CDR
941107-215	L12-3.5	EPA 6010 (Lead)	11/04/94	11/10/94	120	Soil, mg/kg	1	1	CDR
941107-216	K9-3.5	EPA 6010 (Lead)	11/04/94	11/10/94	73	Soil, mg/kg	1	1	CDR
941107-217	M23-3.5	EPA 6010 (Lead)	11/04/94	11/10/94	338	Soil, mg/kg	1	1	CDR
941107-218	J2-3.5	EPA 6010 (Lead)	11/04/94	11/10/94	8.5	Soil, mg/kg	1	1	CDR
941107-219	M5-3.5	EPA 6010 (Lead)	11/04/94	11/10/94	277	Soil, mg/kg	1	1	CDR
Comp 1	Composite 1	EPA 6010 (Lead)	11/04/94	11/10/94	70	Soil, mg/kg	1	1	CDR
Comp 2	Composite 2	EPA 6010 (Lead)	11/04/94	11/10/94	3.1	Soil, mg/kg	1	1	CDR
Comp 3	Composite 3	EPA 6010 (Lead)	11/04/94	11/10/94	ND	Soil, mg/kg	1	1	CDR
Comp 4	Composite 4	EPA 6010 (Lead)	11/04/94	11/10/94	6.5	Soil, mg/kg	1	1	CDR

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL X Dilution Factor
DF = Dilution Factor

Reviewed by Supervisor:

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 11-11-94

The cover letter is an integral part of this analytical report.

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: 400342, Atlas Radiators

Date Received: 11/07/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	DLR	DF	Analyst Initials
941107-213	K16-3.5	EPA 418.1 (TRPH)	11/04/94	11/10/94	130	Soil, mg/kg	20	5	MCC
941107-214	J21-3.5	EPA 418.1 (TRPH)	11/04/94	11/10/94	248	Soil, mg/kg	20	5	MCC
941107-215	L12-3.5	EPA 418.1 (TRPH)	11/04/94	11/10/94	480	Soil, mg/kg	50	12.5	MCC
941107-216	K9-3.5	EPA 418.1 (TRPH)	11/04/94	11/10/94	284	Soil, mg/kg	40	10	MCC
941107-217	M23-3.5	EPA 418.1 (TRPH)	11/04/94	11/10/94	775	Soil, mg/kg	50	12.5	MCC
941107-218	J2-3.5	EPA 418.1 (TRPH)	11/04/94	11/10/94	78	Soil, mg/kg	10	2.5	MCC
941107-219	M5-3.5	EPA 418.1 (TRPH)	11/04/94	11/10/94	405	Soil, mg/kg	50	12.5	MCC
941107-Comp #1	Composite 1	EPA 418.1 (TRPH)	11/04/94	11/10/94	150	Soil, mg/kg	20	5	MCC
941107-Comp #2	Composite 2	EPA 418.1 (TRPH)	11/04/94	11/10/94	90	Soil, mg/kg	20	5	MCC
941107-Comp #3	Composite 3	EPA 418.1 (TRPH)	11/04/94	11/10/94	35	Soil, mg/kg	4	1	MCC
941107-Comp #4	Composite 4	EPA 418.1 (TRPH)	11/04/94	11/10/94	36	Soil, mg/kg	4	1	MCC

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL X Dilution Factor
DF = Dilution Factor

Reviewed by Supervisor: JL

Reviewed/Approved By: M. Yantzoff
Michael A. Yantzoff
Laboratory Director

Date: 11-10-94

The cover letter is an integral part of this analytical report.

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Date Sampled: 11/04/94
Date Received: 11/07/94
Date Analyzed: 11/09/94

Client's Project: Atlas Radiator

Matrix: Soil
Analyst Initials: RR

BTEX

Lab No.:	Sample ID:	Benzene		Toluene		Ethylbenzene		Xylenes (total)		Dilution
		Results, ug/kg	DLR, ug/kg	Results, ug/kg	DLR, ug/kg	Results, ug/kg	DLR, ug/kg	Results, ug/kg	DLR, ug/kg	Factor
Method Blank	NA	ND	5	ND	5	ND	5	ND	5	1
941107-213	K16-3.5	ND	5	ND	5	ND	5	ND	5	1
941107-214	J21-3.5	ND	5	ND	5	ND	5	ND	5	1
941107-215	L12-3.5	ND	5	ND	5	ND	5	ND	5	1
941107-216	K9-3.5	ND	5	ND	5	ND	5	ND	5	1
941107-217	M23-3.5	ND	5	ND	5	ND	5	ND	5	1
941107-218	J2-3.5	ND	5	ND	5	ND	5	ND	5	1
941107-219	M5-3.5	ND	5	ND	5	ND	5	ND	5	1
941107-Comp "1"	Composite 1	ND	5	ND	5	ND	5	ND	5	1
941107-Comp "2"	Composite 2	ND	5	ND	5	ND	5	ND	5	1
941107-Comp "3"	Composite 3	ND	5	ND	5	ND	5	ND	5	1
941107-Comp "4"	Composite 4	ND	5	ND	5	ND	5	ND	5	1

MDL = Method Detection Limit
ND = Not Detected. (Below DLR)
DLR = MDL X Dilution Factor

Reviewed by Supervisor: (a)

Reviewed/Approved By: M. Yaroff for
Edgar P. Caballero
Laboratory Director

Date: 11-10-94

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories

Spike Recovery and RPD Summary Report

Method: 418.1
Analyst: MCC
Data File: 4314-S

Date: 11/10/94
Sample ID: 941031-171
Matrix: SOIL

ANALYTE	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	DLR
TRPH	mg/Kg	5	5	100	ND	ND	40	40	41	100	103	80 - 120	3	20	4

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 11/10/94

Advanced Technology Laboratories

Spike Recovery and RPD Summary Report

Method: 6010
Analyst: CDR/OL
QA File: 4314 - 1
Data File: 41110 - 1

Date Analyzed: 11/10/94
Date Digested: 11/09/94
Sample ID: 941108 - 014
Matrix: Soil
(Digestion Factor: 100/2)

ANALYTE	UNITS	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	MDL
Antimony	mg/kg	ND	ND	5.0	3.4	3.1	68	62	55 - 120	9	30	4.0
Arsenic	mg/kg	ND	ND	5.0	4.9	5.0	98	100	55 - 120	2	30	2.0
Barium	mg/kg	ND	5.3	5.0	11	9.7	114	88	55 - 120	26	30	0.5
Beryllium	mg/kg	ND	ND	5.0	4.5	4.7	90	94	55 - 120	4	30	0.5
Cadmium	mg/kg	ND	ND	5.0	5.0	5.1	100	102	55 - 120	2	30	0.5
Chromium	mg/kg	ND	1.1	5.0	6.0	6.1	98	100	55 - 120	2	30	0.5
Cobalt	mg/kg	ND	0.37	5.0	5.4	5.4	101	101	55 - 120	0	30	0.5
Copper	mg/kg	ND	0.74	5.0	5.5	5.5	95	95	55 - 120	0	30	0.5
Lead	mg/kg	ND	ND	5.0	4.8	4.8	96	96	55 - 120	0	30	1.0
Molybdenum	mg/kg	ND	ND	5.0	4.6	4.6	92	92	55 - 120	0	30	1.0
Nickel	mg/kg	ND	1.1	5.0	6.1	6.1	100	100	55 - 120	0	30	1.0
Selenium	mg/kg	ND	ND	5.0	4.6	4.8	92	96	55 - 120	4	30	2.0
Silver	mg/kg	ND	ND	5.0	2.6	2.7	52	54	50 - 120	4	30	0.5
Thallium	mg/kg	ND	ND	5.0	4.5	4.4	90	88	55 - 120	0	30	1.0
Vanadium	mg/kg	ND	1.3	5.0	6.0	6.1	94	96	55 - 120	2	30	0.5
Zinc	mg/kg	ND	1.1	5.0	6.2	5.2	102	82	55 - 120	22	30	0.5

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 11/10/94

Advanced Technology Laboratories

Spike Recovery and RPD Summary Report - SOIL (ug/kg)

Method : C:\HPCHEM\5\METHODS\8021.M
Title : 8010/8020 & 601/602
Last Update : Wed Nov 09 15:40:42 1994
Response via : Initial Calibration

Non-Spiked Sample: VC1160.D

	Spike Sample	Spike Duplicate Sample
File ID :	VS1191.D	VS1192.D
Sample :	Blank Soil MS BTEX	Blank Soil MSD BTEX
Acq Time:	09 Nov 94 11:45 PM	10 Nov 94 00:21 AM

Compound	Sample Conc	Spike Added	Spike Res	Dup Res	Spike %Rec	Dup %Rec	RPD	QC Limits RPD	QC Limits % Rec
Benzene #2	0.0	30	31.6	32.1	105	107	2	21	66-142
Toluene #2	0.0	30	30.5	31.4	102	105	3	21	59-139

Reviewed and Approved by: _____ Date: 11/10/94
Scott Stratton
Organics Supervisor

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14786
Long Beach, CA 90803
(310) 433-5144
FAX (310) 433-6996

P.O. Box 81904
Fairbanks, AK 90708
(907) 479-9555

TURNAROUND TIME: 72 TAT
P/Q Fax results ASAP

PROJECT NO.: 400342
PROJECT NAME: Atlas Aviation
SAMPLER: (Signature) [signature]

TYPE: Container (Glass, SS, Brass) — Glass circled; Sample Matrix (Soil, Water) — Soil circled

ANALYSIS: 418.1; CCR Metals Pb only; 8020 BTEX

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	Container	Sample Matrix	418.1	CCR Metals Pb only	8020 BTEX
K16-3.5	11/4/94	1046	941107-213	X	X	X	X	X
J21-3.5	↓	1043	214	↓	↓	X	X	X
L12-3.5	↓	1048	215	↓	↓	X	X	X
K9-3.5	↓	1044	216	↓	↓	X	X	X
M23-3.5	↓	1041	217	↓	↓	X	X	X
J2-3.5	↓	1051	218	↓	↓	X	X	X
M5-3.5	↓	1050	219	↓	↓	X	X	X
F25-.5	↓	1023	Composite into 1 sample (Comp#1) 220	↓	↓	X	X	X
C26-.5	↓	1022	221	↓	↓	X	X	X
A16-.5	11/4/94	1015	222	X	X	X	X	X

TOTAL NUMBER OF CONTAINERS: 10

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	11/7/94 1510	[signature]	[signature]	11/7/94	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk-in			[signature]	11/7/94, 5pm

2/3

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766, Long Beach, CA 90803 — (310) 433-5144, FAX (310) 433-6998

P.O. Box 81904, Fairbanks, AK 99708 — (907) 479-9555

TURNAROUND TIME: 72 hour TAT for results

P/O

PROJECT NO. 400342

PROJECT NAME Atlas Radiator

SAMPLER: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: Container (Glass, SS, Brass)	TYPE: Sample Matrix (Soil / Water)	ANALYSIS: 418.1	ANALYSIS: CCR Metals - Pb only	ANALYSIS: 8020 BTEX
B2-1P	11/4/94	1006	941107-223 (Comp #2)	X	X	X	X	X
E5-1P		1007	224					
C7-1P		1013	225					
H1-1P		1005	226					
B10-1P		1032	227					
G7-1P		1012	228 (Comp #3)					
I11-1P		1016	229					
E13-1P		1015	230					
	11/4/94			X	X			

Composite into 1 sample

TOTAL NUMBER OF CONTAINERS: 8

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	1530 11/7/94			11/7/94	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT: Walk-in		SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME 11/7/94, 5 PM

3/3

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14760, Long Beach, CA 90803 — (310) 433-5144, FAX (310) 433-6998

P.O. Box 81904, Fairbanks, AK 99708 — (907) 479-9555

TURNAROUND TIME: 72 TAT

P/O AFE number

PROJECT NO. 400342

PROJECT NAME Atlas Radiator

SAMPLER: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: Container (Glass, SS, Brass)	TYPE: Sample Matrix (Soil, Water)	ANALYSIS: 418.1	ANALYSIS: CCR Metals - Pb only	ANALYSIS: 8020 BTEX
A21-1P	11/4/94	1027	Quench 231	X	X	X	X	X
I15-1P		1017	Composite into 232 sample					
E20-1P		1028	233					
B19-1P		1021	234 (comp. #4)					
	11/4/94			X	X			

TOTAL NUMBER OF CONTAINERS: 4

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	11/7/94 1510			11/7/94	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT	SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk-in				11/7/94, 5pm

d:\wp\forms\labchain 1004

Table IV
Additional Background Sample Analysis

and
Laboratory Analytical Reports

Table IV
Additional Background Sample Analysis

Sample Identification	Depth (ft)	Analytical Results (ppm)
		CCR Metals[3]
SP7	Surface Grade	Cu @ 277 / Pb @ 1,540
J12-0.5	0.5	Pb @ 81
J12-1.5	1.5	BTL
J12-2.5	2.5	Pb @ 237
M6-0.5	0.5	Cu @ 320 / Pb @ 9,700 / Zn @ 4,350
M6-1.5	1.5	Pb
M6-2.5	2.5	BTL
M6-3.5	3.5	BTL
J26-0.5	0.5	Pb @ 98
J26-1.5	1.5	BTL
J26-2.5	2.5	BTL
J26-3.5	3.5	BTL
11800TNA[1]	Surface Grade	BTL
11440brick[2]	Surface Grade	BTL

[1&2] Off-site samples from County sewer installation excavations
[3] Only those results which exceed 10x the STLC action limit are reported
ft = feet
ppm = parts per million
Cu, Pb, Zn = Copper, lead and zinc, respectively
BTL = Below Threshold Limits
STLC = Soluble Threshold Limit Concentration

Advanced Technology Laboratories

RECEIVED
NOV 28 1994
A. P. E. E.

ELAP No.: 1838
Exp. Date: 12-31-94

Alaska Petroleum Environmental Engineering
P. O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator 400342
Lab No.: 941120-001/014

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the parameters indicated in the enclosed chain of custody.

The sample(s) arrived chilled, intact, with a chain of custody record attached.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

M. Yartzoff

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: APEE
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400342

Date Received: 11/19/94
Matrix: Soil
Units: mg/kg
Digestion Method: 3050

EPA Method 6010 (CCR Metals)

Lab No.:		941120-001	941120-002	941120-003	941120-004	941120-005	941120-006	941120-007	941120-008
Client Sample I.D.:		SP-7	J12-.5	J12-1.5	J12-2.5	M6-.5	M6-1.5	M6-2.5	M6-3.5
Date Sampled:		11/19/94	11/19/94	11/19/94	11/19/94	11/19/94	11/19/94	11/19/94	11/19/94
Date Digested:		11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94
Date Analyzed:		11/21/94	11/21/94	11/21/94	11/21/94	11/21/94	11/21/94	11/21/94	11/21/94
Analyst Initials:		CDR/KS	CDR/KS	CDR/KS	CDR/KS	CDR/KS	CDR/KS	CDR/KS	CDR/KS
Dilution Factor:		1	1	1	1	1	1	1	1
ANALYTE*	DLR	RESULTS							
Antimony	4	ND	ND	ND	ND	41	24	ND	13
Arsenic	2	ND	ND	ND	ND	ND	ND	ND	ND
Barium	0.5	5.0	41	118	84	193	990	96	65
Beryllium	0.5	ND	ND	ND	ND	0.68	ND	ND	ND
Cadmium	0.5	1.3	ND	0.90	0.95	7.8	1.7	0.64	ND
Chromium ***	0.5	6.6	5.6	11	17	281	12	12	8.0
Cobalt	0.5	1.1	3.7	9.3	5.8	2.9	5.4	6.0	5.6
Copper	0.5	277	21	20	55	520	45	13	21
Lead	1	1540	81	8.7	237	9700	159	ND	6.9
Mercury **	0.50	ND	ND	ND	ND	ND	ND	ND	ND
Molybdenum	1	ND	ND	ND	ND	ND	ND	ND	2.1
Nickel	1	5.5	3.3	12	9.4	13	8.7	8.2	3.0
Selenium	2	ND	ND	ND	ND	ND	ND	ND	ND
Silver	0.5	11	ND	ND	ND	ND	ND	ND	3.0
Thallium	1	ND	ND	ND	ND	ND	ND	ND	6.3
Vanadium	0.5	ND	7.9	23	16	144	20	25	20
Zinc	0.5	147	123	40	525	4350	162	30	24

MDL = Method Detection Limit
ND = Not Detected (Below MDL).
DLR = MDL X Dilution Factor

* = Only listed constituents designated with TTLC an STLC under CCR Title 22
** = Analysis by EPA Method 7471, Factor is 2
*** = From Title 22 – If the soluble chromium, as determined by the TCLP set forth in Appendix 1 of Chapter 18 of this division (4), less than 5 mg/l , and the soluble chromium, as determined by the procedure set forth in Appendix II of chapter 11, equals or exceeds 560 mg/l and the waste is not otherwise identified as a RCRA hazardous waste pursuant to section 6626.100, then the waste is a non-RCRA hazardous waste.

Reviewed/Approved By: _____ Date: 11-21-94
Michael A. Yarnoff
Laboratory Director

The cover letter is an integral part of the analytical report.

Client: APEE
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400342

Date Received: 11/19/94
Matrix: Soil
Units: mg/kg
Digestion Method: 3050

EPA Method 6010 (CCR Metals)

Lab No.:		941120-009	941120-010	941120-011	941120-012	941120-013	941120-014		
Client Sample I.D.:		J26-.5	J26-1.5	J26-2.5	J26-35	11800TWA	11440BRICK		
Date Sampled:		11/19/94	11/19/94	11/19/94	11/19/94	11/19/94	11/19/94		
Date Digested:		11/20/94	11/20/94	11/20/94	11/20/94	11/20/94	11/20/94		
Date Analyzed:		11/21/94	11/21/94	11/21/94	11/21/94	11/21/94	11/21/94		
Analyst Initials:		CDR/KS	CDR/KS	CDR/KS	CDR/KS	CDR/KS	CDR/KS		
Dilution Factor:		1	1	1	1	1	1		
ANALYTE*	DLR	RESULTS							
Antimony	4	ND	ND	12	20	18	ND		
Arsenic	2	66	9.6	7.0	6.2	19	ND		
Barium	0.5	140	120	160	118	133	72		
Beryllium	0.5	ND	ND	ND	ND	ND	ND		
Cadmium	0.5	1.1	1.2	1.2	0.87	1.2	0.54		
Chromium ***	0.5	12	9.9	17	11	10	4.8		
Cobalt	0.5	5.6	8.1	11	7.6	7.1	4.0		
Copper	0.5	41	22	26	20	25	15		
Lead	1	98	5.9	1.3	5.0	8.7	2.7		
Mercury **	0.50	ND	ND	ND	ND	ND	ND		
Molybdenum	1	ND	ND	ND	1.6	ND	ND		
Nickel	1	8.3	10	13	11	8.2	3.7		
Selenium	2	ND	ND	7.5	2.6	ND	18		
Silver	0.5	ND	ND	ND	ND	13	7.4		
Thallium	1	ND	ND	ND	ND	ND	ND		
Vanadium	0.5	19	23	36	27	24	14		
Zinc	0.5	153	23	40	27	33	15		

MDL = Method Detection Limit
ND = Not Detected (Below MDL).
DLR = MDL X Dilution Factor

* = Only listed constituents designated with TTLC an STLC under CCR Title 22
** = Analysis by EPA Method 7471, Factor is 2
*** = From Title 22 - If the soluble chromium, as determined by the TCLP set forth in Appendix 1 of Chapter 18 of this division (4), less than 5 mg/l , and the soluble chromium, as determined by the procedure set forth in Appendix II of chapter 11, equals or exceeds 560 mg/l and the waste is not otherwise identified as a RCRA hazardous waste pursuant to section 6626.100, then the waste is a non-RCRA hazardous waste.

Reviewed/Approved By: _____ Date: 11-21-94
Michael A. Tartaglia
Laboratory Director

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: 7471
Analyst: KS/OL
Data File: 4325 - 1

Date: 11/21/94
Sample ID: 941120-014 ms/msd
Matrix: Soil

ANALYTE	UNITS	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	DLR
Mercury	mg/kg	ND	ND	2.5	2.4	2.6	94	103	55 - 120	9	30	0.50

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 11/21/94

Advanced Technology Laboratories

Spike Recovery and RPD Summary Report

Method: 6010
Analyst: CDR/OL
QA File: 4325 - 1
Data File: 41121 - 1

Date Analyzed: 11/21/94
Date Digested: 11/20/94
Sample ID: 941120 - 014
Matrix: Soil
(Digestion Factor: 100/2)

ANALYTE	UNITS	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	MDL
Antimony	mg/kg	ND	ND	5.0	5.5	5.2	110	104	55 - 120	6	30	4.0
Arsenic	mg/kg	ND	ND	5.0	5.1	4.9	102	98	55 - 120	4	30	2.0
Barium	mg/kg	ND	1.40	5.0	6.4	6.8	100	108	55 - 120	8	30	0.5
Beryllium	mg/kg	ND	ND	5.0	5.3	4.8	106	96	55 - 120	10	30	0.5
Cadmium	mg/kg	ND	ND	5.0	5.3	4.6	106	92	55 - 120	14	30	0.5
Chromium	mg/kg	ND	ND	5.0	5.5	4.9	110	98	55 - 120	12	30	0.5
Cobalt	mg/kg	ND	ND	5.0	5.4	4.8	108	96	55 - 120	12	30	0.5
Copper	mg/kg	ND	0.30	5.0	5.5	5.5	104	104	55 - 120	0	30	0.5
Lead	mg/kg	ND	ND	5.0	5.4	4.8	108	96	55 - 120	12	30	1.0
Molybdenum	mg/kg	ND	ND	5.0	5.2	5.0	104	100	55 - 120	4	30	1.0
Nickel	mg/kg	ND	ND	5.0	5.2	4.8	104	96	55 - 120	8	30	1.0
Selenium	mg/kg	ND	ND	5.0	5.2	4.3	104	86	55 - 120	19	30	2.0
Silver	mg/kg	ND	ND	5.0	2.9	2.8	58	56	55 - 120	4	30	0.5
Thallium	mg/kg	ND	ND	5.0	5.4	4.5	108	90	55 - 120	18	30	1.0
Vanadium	mg/kg	ND	0.27	5.0	5.7	5.2	109	99	55 - 120	10	30	0.5
Zinc	mg/kg	ND	0.29	5.0	5.4	5.2	102	98	55 - 120	4	30	0.5

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 11/21/94

Advanced Technology Laboratories

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14760
LONG BEACH, CALIFORNIA
(213) 433-5144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-0565 99708

TURNAROUND TIME: 24 TAT for results [illegible]
P/Q 54 /200 11/21

PROJECT NO.: 400341
PROJECT NAME: Atlas Welder
SAMPLERS: (Signature) [signature]

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	FUEL HC 8015 - M / E	PETROLEUM HC 418.1	BTXE 8020	VOLATILE ORGANICS 624 / 8240	EXTRACTABLE ORGANICS 625 / 8270	CCR METALS TOTAL	OTHER	OTHER
SP-7	11/19/94	1045		X	P						X		
J12-.5	↓	1235		↓	B						↓		
J12-1.5	↓	1238		↓	B						↓		
J12-2.5	↓	1245		↓	P						↓		
M6-.5	↓	1115		↓	B						↓		
M6-1.5	↓	1125		↓	↓						↓		
M6-2.5	↓	1134		↓	↓						↓		
M6-3.5	↓	1142		↓	↓						↓		
J24-.5	↓	1159		↓	↓						↓		
J24-1.5	11/19/94	1208		X	B						X		

TOTAL NUMBER OF CONTAINERS:

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	1554 11/19/94	[signature]			

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk-in			[signature]	11/19/94 4:05 PM

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14766
LONG BEACH, CALIFORNIA
(213) 433-5144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-0555 99708

TURNAROUND TIME:
24 TAT, Fax results ASAP
P/O 54 1200 11/21

PROJECT NO. 400347
PROJECT NAME Athl Navigation
SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID (SOLID)	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015 - M / E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER	OTHER
J26-2.5	11/19/94	1222		X	G						X		
J26-3.5		1225			G								
11800 TWA					P								
11440 Brine													
	11/19/94			V							V		

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	1776 11/19/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk-in				11/19/94 4:00PM

Table V
Stockpile Re-Analysis for Total Lead

Table VI
Sampling Frequency and Test Methodology

and
Laboratory Analytical Reports

Table V
Stockpile Re-Analysis for Total Lead

Sample Identification	Analytical Results (ppm)
	7420
SP - 1	5.9
SP - 2	6.1
SP - 3	344

ppm = parts per million
7420 = Total lead

Table VI
Sampling Frequency and Test Methodology[1]

Stockpile Number	Number of Discrete Samples	Number of Composite Samples	Analysis (ppm)				
			7420	6010	239.1	STLC	Average Pb Concentration
1	40	10	34	39	NA	NA	23.9
2	40	10	96	77	0.54	NA	51.4
3	45	11	304	149	0.93	NA	141.6
4	40	10	179	180	0.23	NA	110.3
5	40	10	782	177	1.8	NA	108.3
6	20	5	NA	89	1.7	4.5	71.6
					Composite Average		89.5

[1] Due to the volume of samples procured this is a condensed table
ppm = parts per million
7420/6010 = Total lead
239.1 = TCLP (Toxicity Characteristic Leaching Procedure)
STLC = Soluble Threshold Limit Concentration
Pb = Lead
NA = Not Analyzed

Advanced Technology
Laboratories

ELAP No.: 1838
Exp. Date: 12-31-94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, Y00342
Lab No.: 941115-001/003

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters:

The sample(s) arrived chilled, intact, with a chain of custody record attached.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, Y00342

Date Received: 11/15/94
Date Digested: 11/15/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results	Matrix, Units	DLR	DF	Analyst Initials
941115-001	SP-1	EPA 7420 (Lead)	11/15/94	11/16/94	5.9	Solid, mg/kg	2.4	1	KS
941115-002	SP-2	EPA 7420 (Lead)	11/15/94	11/16/94	6.1	Solid, mg/kg	2.4	1	KS
941115-003	SP-3	EPA 7420 (Lead)	11/15/94	11/16/94	344	Solid, mg/kg	2.4	1	KS

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DLR = MDL X Dilution Factor
DF = Dilution Factor

Reviewed/Approved By: _____ Date: 11/16/94
Michael A. Yartzoff
Laboratory Director

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Spike Recovery and RPD Summary Report

Method: 7420
Analyst: KS/OL
Data File: 4320 - 2

Date Analyzed: 11/16/94
Date Digested: 11/16/94
Sample ID: 941115 - 340 ms/msd
Matrix: Soil
(Digestion Factor: 100/2)

ANALYTE	UNITS	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	DLR
Lead	mg/kg	ND	ND	5.0	3.9	4.1	79	83	55 - 120	5	30	2.4

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 11/16/94

Advanced Technology Laboratories

CHAIN OF CUSTODY RECORD

Advanced Technology Laboratories
1510 E. 33rd Street
Signal Hill, CA 90807
(310) 989-4045 • FAX (310) 989-4040

FOR LABORATORY USE ONLY:

Batch #: 4971 D.O. #: ______
P.O.#: ______
Logged By: [illegible] Date: 11-15-94 Time: 12:[illegible]

Method of Transport: Walk-in ☒ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt:
CHILLED Y ☐ N ☒ | CONTAINER INTACT Y ☒ N ☐
SEALED Y ☐ N ☒ | # OF SPLS MATCH COC Y ☒ N ☐
SEAL INTACT Y ☐ N ☒ | * HAZARDOUS FEE Y ☐ N ☐
PRESERVED Y ☐ N ☒ | HEADSPACE(VOA) Y ☐ N ☐
CONTR. LOT # ______ | COOLER TEMP °C ______ (2-6)

Client: Alaska Petroleum Envr. Engr.
Address: PO Box 14744
City: Long Beach State: CA Zip Code: 90803
TEL: (310) 433 5144
FAX: (310) 433 6998

Project Name: Atlas Mediator
Project #: Y00342
Sampler: (Printed Name) R. Glenn Stillman (Signature) [signature]

Relinquished by: (Signature and Printed Name) [signature] R. Glenn Stillman | Received by: (Signature and Printed Name) [signature] Marinel Cruz | Date: 11/15/94 | Time: 1108
Relinquished by: (Signature and Printed Name) | Received by: (Signature and Printed Name) | Date: | Time:
Relinquished by: (Signature and Printed Name) | Received by: (Signature and Printed Name) | Date: | Time:

Unless otherwise requested, all samples will be disposed 60 days after receipt.

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter: R. Glenn Stillman Date: 11 / 15 / 94
Print Name
[signature]
Signature

Special Instructions/Comments:
All with results ASAP → Wed. morning (11/16/94)
Priority TAT
(TAT 120)

SHIP TO LAB: (SUB CONTRACT) ______ TEST: ______ ATL #: ______ DATE: ______ CLIENT I.D. ______
SHIP TO LAB: (SUB CONTRACT) ______ TEST: ______ ATL #: ______ DATE: ______ CLIENT I.D. ______
SHIP TO LAB: (SUB CONTRACT) ______ TEST: ______ ATL #: ______ DATE: ______ CLIENT I.D. ______

Circle or Add Analysis(es) Requested: 601/8010 (Halogenated Volatiles-GC); 602/8020/BTEX (Aromatic Volatiles-GC); 608/8080 (Pesticides/PCB-GC); 624/8240/8260 (Volatiles-GC/MS); 625/8270 (BNA-GC/MS); 8015M TPH(G)/BTEX (COMBINATION); 8015M TPH(D) (Diesel-GC); 418.1 (TPH-IR); Metals-Total (CAM [illegible]) Pb only

CIRCLE APPROPRIATE MATRIX

ITEM	LAB USE ONLY: Batch #: Lab No.	Sample I.D.	Date	Time	418.1 (TPH-IR)	Metals (Pb only)	SOIL/SOLID	TAT	Container(s) #	Type
	941115-001	SP-1	11-15-94		X	X	X	A		P
	002	SP-2	11-15-94		X	X	X	A		P
	003	SP-3	11-15-94		X	X	X	A		P

Matrix columns: SOIL/SOLID, WATER/LIQUID, SLUDGE/OIL, GAS/AIR, WIPE/FILTER, MULTIPHASE, OTHER

PRESERVATION | REMARKS

QA/QC: RTNE ☒ RWQCB ☐ WIP ☐ NAVY ☐ CT ☐ OTHER ______

Sample Archive/Disposal: ☒ Laboratory Standard ☐ Other ______ ☐ Return To: ______

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays
* TAT starts 8 a.m. following day if samples received after 3 p.m.

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=Zn(AC)$_2$ O=NaOH T=$Na_2S_2O_3$

Container Types: B=Brass V=VOA L=Liter P=Pint J=Jar T=Tedlar G=Glass P=Plastic M=Metal

* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

DISTRIBUTION: White with report, Blue with file folder, Green to organic, Yellow to inorganic, Pink to sample control, Gold to submitter.

Advanced Technology
Laboratories

December 9, 1994

ELAP No.: 1838
Exp. Date: 12–31–94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5206–001/005

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters:

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 – 4045 if I can be of further assistance to your company.

Sincerely,

Michael A. Yarjoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/07/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5206-001	1SPA	EPA 7420 (Lead)	12/07/94	12/09/94	8.0	Soil, mg/kg	2.4	2.4	MCC
5206-002	1SPB	EPA 7420 (Lead)	12/07/94	12/09/94	8.0	Soil, mg/kg	2.4	2.4	MCC
5206-003	1SPC	EPA 7420 (Lead)	12/07/94	12/09/94	7.0	Soil, mg/kg	2.4	2.4	MCC
5206-004	1SPD	EPA 7420 (Lead)	12/07/94	12/09/94	18	Soil, mg/kg	2.4	2.4	MCC
5206-005	1SPE	EPA 7420 (Lead)	12/07/94	12/09/94	34	Soil, mg/kg	2.4	2.4	MCC

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: _____ Date: 12/9/94
Michael A. Yartzoff
Laboratory Director

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Spike Recovery and RPD Summary Report

Method: 7420
Analyst: MCC/OL/MS
Data File: 4343-S

Date: 12/09/94
Sample ID: 5206-001
Matrix: Soil

ANALYTE	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
Lead	mg/Kg	5	4.6	92	ND	8.0	250	290	205	113	79	55-120	34	30	2.40

Approved by: _____
Cheryl De Los Reyes
Inorganics Supervisor

Date: 12/7/94

Advanced Technology Laboratories

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14765
LONG BEACH, CALIFORNIA
(213) 433-6144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-0555 99708

TURNAROUND TIME: 24 hours for results on available

P/Q

PROJECT NO. 400343

PROJECT NAME Atlas Radiator

SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015 - M / E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER: Pb 7420
ISPC-9			Composit into one Sample ISPC									
ISPC-12												
ISPD-3												
ISPD-6			Composit Sample ISPD into one									
ISPD-9												
ISPD-12												
ISPE-3												
ISPE-6			one Composit Sample ISPE									
ISPE-9												
ISPE-12												

TOTAL NUMBER OF CONTAINERS

RELENQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	12/7/94 6pm				
RELENQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
			[signature]	12-7-94 7:30p

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14766
LONG BEACH, CALIFORNIA
(213) 433-5144 90803
FAX: (213) 433-6998

P. O. BOX 61904
FAIRBANKS, ALASKA
(907) 479-0555 99706

TURNAROUND TIME:
24 hour TAT
fax results as available
P/Q

PROJECT NO.: 400343
PROJECT NAME: Atlas Radiator
SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015-MTE	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER: Pb 7420
1SPA-3	12-7-94		Composit into one Sample 1SPA	✓	✓							✓
1SPA-6												
1SPA-9												
1SPA-12												
1SPB-3												
1SPB-6			Composit into one Sample 1SPB	✓	✓							✓
1SPB-9												
1SPB-12												
1SPC-3				✓	✓							✓
1SPC-6			Composit into one Sample (Most Age)									

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	12/7/94 6:pm				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
			[signature]	12-7-94 7:30

Advanced Technology
Laboratories

December 14, 1994

ELAP No.: 1838
Exp. Date: 12-31-94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5235-001/005

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

M. Yantzoff

Michael A. Yantzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/13/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5235-001	1SPA	EPA 6010 (Lead)	12/07/94	12/14/94	13	Soil, mg/kg	1.0	1.0	CDR
5235-002	1SPB	EPA 6010 (Lead)	12/07/94	12/14/94	24	Soil, mg/kg	1.0	1.0	CDR
5235-003	1SPC	EPA 6010 (Lead)	12/07/94	12/14/94	7.3	Soil, mg/kg	1.0	1.0	CDR
5235-004	1SPD	EPA 6010 (Lead)	12/07/94	12/14/94	39	Soil, mg/kg	1.0	1.0	CDR
5235-005	1SPE	EPA 6010 (Lead)	12/07/94	12/14/94	15	Soil, mg/kg	1.0	1.0	CDR

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Yantzi
Michael A. Yantzi
Laboratory Director

Date: 12-14-94

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: 6010 (Lead)
Analyst: CDR/OL
Data File: 4348 - 3

Date: 12/14/94
Sample ID: 5242 - 015
Matrix: Soil

ANALYTE	UNITS	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
Lead	mg/kg	ND	1.10	5.0	6.0	6.3	98	104	55 - 120	6	30	1.0

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 12/14/94

Advanced Technology Laboratories

CHAIN OF CUSTODY RECORD

Pg 1 of 1

Advanced Technology Laboratories
1510 E. 33rd Street
Signal Hill, CA 90807
(310) 989-4045 • FAX (310) 989-4040

FOR LABORATORY USE ONLY:

Batch #: 5235 D.O. #:
P.O.#:
Logged By: DC. Date: 12-13-94 Time: 7:10p

Method of Transport: Walk-in ☐ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt:
CHILLED Y ☐ N ☐ | CONTAINER INTACT Y ☐ N ☐
SEALED Y ☐ N ☐ | # OF SPLS MATCH COC Y ☐ N ☐
SEAL INTACT Y ☐ N ☐ | * HAZARDOUS FEE Y ☐ N ☐
PRESERVED Y ☐ N ☐ | HEADSPACE(VOA) Y ☐ N ☐
CONTR. LOT # | COOLER TEMP °C (2-6)

Client: APCE
Attn: GLENN STILLMAN
Address: | TEL: ( )
City | State | Zip Code | FAX: ( )
Project Name: 400343 Project #: Sampler: (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name) | Received by: (Signature and Printed Name) | Date: | Time:
Relinquished by: (Signature and Printed Name) | Received by: (Signature and Printed Name) | Date: | Time:
Relinquished by: (Signature and Printed Name) | Received by: (Signature and Printed Name) | Date: 12-13-94 | Time: 7:10 pm

Unless otherwise requested, all samples will be disposed 60 days after receipt.

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Print Name Date: / /
Signature

Special Instructions/Comments:
CHANGE ORDER!
THESE ARE THEIR COMPOSITE SAMPLES

SHIP TO LAB: (SUB CONTRACT) TEST: ATL #: DATE: CLIENT I.D.
SHIP TO LAB: (SUB CONTRACT) TEST: ATL #: DATE: CLIENT I.D.
SHIP TO LAB: (SUB CONTRACT) TEST: ATL #: DATE: CLIENT I.D.

Circle or Add Analysis(es) Requested: 601/8010 (Halogenated Volatiles-GC); 602/8020/BTEX (Aromatic Volatiles-GC); 608/8080 (Pesticides/PCB-GC); 624/8240/8260 (Volatiles-GC/MS); 625/8270 (BNA-GC/MS); 8015M TPH-G/BTEX (COMBINATION); 8015M TPH-D (Diesel-GC); 418.1 (TPH-IR); Metals-Total (CAC-6010/7000); 6010 ICP Pb

CIRCLE APPROPRIATE MATRIX: SOIL/SOLID; WATER/LIQUID; SLUDGE/OIL; GAS/AIR; WIPE/FILTER; MULTIPHASE; OTHER

PRESERVATION: TAT; Container(s) # Type

QA/QC: RTNE ☑ RWQCB ☐ WIP ☐ NAVY ☐ CT ☐ OTHER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D.	Date	Time	TAT	#	Type	REMARKS
	(15PA)	5235-001 (5208-001)	12-7		B	1	G J	
	(15PB)	002 002						
	(15PC)	003 003						
	(15PD)	004 004						
	(15PE)	005 005						

Sample Archive/Disposal: ☐ Laboratory Standard ☐ Other ☐ Return To:

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays
* TAT starts 8 a.m. following day if samples received after 3 p.m.

Container Types: B=Brass V=VOA L=Liter P=Pint J=Jar T=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

* $10.00 FEE PER HAZARDOUS SAMPLE DISPOSAL.

DISTRIBUTION: White with report, Blue with file folder, Green to organic, Yellow to inorganic, Pink to sample control, Gold to submitter.

Advanced Technology
Laboratories

December 7, 1994

ELAP No.: 1838
Exp. Date: 12–31–94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5184–001/003

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters:

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 – 4045 if I can be of further assistance to your company.

Sincerely,

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/06/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5184-001	3T30	EPA 7420 (Lead)	12/05/94	12/07/94	144	Soil, mg/kg	2.4	2.4	CDR
5184-002	3T10	EPA 7420 (Lead)	12/05/94	12/07/94	250	Soil, mg/kg	2.4	2.4	CDR
5184-003	3T20	EPA 7420 (Lead)	12/05/94	12/07/94	171	Soil, mg/kg	2.4	2.4	CDR

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 12-7-94

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: 7420
Analyst: CDR/OL
Data File: 4341 - 1

Date: 12/07/94
Sample ID: 5184 - 003
Matrix: Soil

ANALYTE	UNITS	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	DLR
Lead	mg/kg	ND	3.4	5.0	7.7	8.0	86	92	55 - 120	7	30	2.4

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 12/7/94

Advanced Technology Laboratories

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P.O. Box 14766
Long Beach, CA
90803

(310) 433-5144
FAX (310) 433-0998

P.O. Box 81904
Fairbanks, AK
99708

(907) 479-9555

TURNAROUND TIME: 24 hour TAT for results ASAP

P/Q

PROJECT NO. 400343

PROJECT NAME Atlas Wellington

SAMPLER: (Signature) Saeed Shahidi

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: Container (Glass, SS, Brass)	TYPE: Sample Matrix (Soil / Water)	ANALYSIS: PS 7420
3T30	12/7/94		3-13' Sieve all Samples	P	X	X
3T10			2-13' prior to analysis	P		X
3T20			2-13 60 mesh	P		X
	12/7/94				X	

TOTAL NUMBER OF CONTAINERS: 3

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	12-8-94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT:		SHIPPED BY: (Signature)	COURIER (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME: 12-9-94/2:45pm

Advanced Technology Laboratories

RECEIVED
DEC 16 1994
A. P. E. E.

December 8, 1994

ELAP No.: 1838
Exp. Date: 12–31–94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5185–001/005

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 – 4045 if I can be of further assistance to your company.

Sincerely,

M. Yartzoff

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/07/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results	Matrix, Units	MDL	DLR	Analyst Initials
5185-001	Comp 3A	EPA 7420 (Lead)	12/06/94	12/08/94	304	Soil, mg/kg	2.4	2.4	CDR
5185-002	Comp 3B	EPA 7420 (Lead)	12/06/94	12/08/94	116	Soil, mg/kg	2.4	2.4	CDR
5185-003	Comp 3C	EPA 7420 (Lead)	12/06/94	12/08/94	135	Soil, mg/kg	2.4	2.4	CDR

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 12-8-94

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: 7420
Analyst: CDR/OL
Data File: 4342 - 1

Date Analyzed: 12/08/94
Date Digested: 12/08/94
Sample ID: 5185 - 003
Matrix: Soil
(Digestion Factor : 100/2)

ANALYTE	UNITS	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% REC Limit	RPD	RPD Limit	DLR
Lead	mg/kg	ND	2.7	5.0	6.0	5.7	66	60	55 - 120	10	30	2.4

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 12/8/94

Advanced Technology Laboratories

1/2

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14708
LONG BEACH, CALIFORNIA
(213) 433-5144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-0555 99708

TURNAROUND TIME: 24 hr TAT
priority rush
P/Q fax results

PROJECT NO.	PROJECT NAME	SAMPLERS: (Signature)
400343	Atlas Aviation	Saeed Shahidi

TYPE: LIQUID / SOLID (circled) / GLASS / PLASTICS / BRASS / SS
ANALYSIS: FUEL HC 8015 - M/E; PETROLEUM HC 418.1; BTXE 8020; VOLATILE ORGANICS 624 / 8240; EXTRACTABLE ORGANICS 625 / 8270; CCR METALS TOTAL
OTHER: Pb 7420

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	SOLID	GLASS/BRASS	Pb 7420
+ 3S20-2	12-6-94	-2, 8, 12, 4	Composite into 1 sample then analyze "Comp 3A" (3SPA)	X	X	X
+ 3R20-8	↓			X	X	X
+ 3R20-12				X	X	X
+ 3S20-4				X	X	X
+ 3S20-6		-4, 2, 10, 12	"Comp 3B"	X	X	X
+ 3R20-2				X	X	X
+ 3R20-10				X	X	X
+ 3S20-12			Comp 3C	X	X	X
+ 3S10-10				X	X	X
+ 3S10-8	12-6-94			X	X	X

TOTAL NUMBER OF CONTAINERS: 10

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	0830 12-7-94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
		Craig Simon	[signature]	12-7-94 10:45 am

Advanced Technology
Laboratories

December 9, 1994

ELAP No.: 1838
Exp. Date: 12–31–94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5207–001/004

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters:

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 – 4045 if I can be of further assistance to your company.

Sincerely,

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/07/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results	Matrix, Units	MDL	DLR	Analyst Initials
5207-001	Composite 35PB	EPA 7420 (Lead)	12/07/94	12/09/94	89	Soil, mg/kg	2.4	2.4	MCC
5207-002	Composite 35PC	EPA 7420 (Lead)	12/07/94	12/09/94	70	Soil, mg/kg	2.4	2.4	MCC
5207-003	Composite 35PD	EPA 7420 (Lead)	12/07/94	12/09/94	72	Soil, mg/kg	2.4	2.4	MCC
5207-004	Composite 35PE	EPA 7420 (Lead)	12/07/94	12/09/94	135	Soil, mg/kg	2.4	2.4	MCC

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: _____
Michael A. Yartzoff
Laboratory Director

Date 12/9/94

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: 7420
Analyst: MCC/OL/MS
Data File: 4343-S

Date: 12/09/94
Sample ID: 5206-001
Matrix: Soil

ANALYTE	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
Lead	mg/Kg	5	4.6	92	ND	8.0	250	290	205	113	79	55-120	34	30	2.40

Approved by: _____
Cheryl De Los Reyes
Inorganics Supervisor

Date: 12/9/94

Advanced Technology Laboratories

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14766
LONG BEACH, CALIFORNIA
(213) 433-6144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-8555 90708

TURNAROUND TIME: 24 hr TAT

P/Q Fax results as available

PROJECT NO. 400343

PROJECT NAME Atlas Radiator

SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID (SOLID)	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015 - M / E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER: Pb 7420
3R80-3	12/7/94											
3R80-6												
3R80-9			Composit 3SPB									
3R80-12												
3S60-2												
3S60-6												
3S60-10			Composite 3SPC									
3S60-12												
3R40-2												
3R40-6			Need Pb									

TOTAL NUMBER OF CONTAINERS

RELENQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	12/7/94				
RELENQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
				12-7-94 7:30

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14766
LONG BEACH, CALIFORNIA
(213) 433-6144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-0555 99708

TURNAROUND TIME: 24 hr. TAT

P/Q Fax / Fax results as available

PROJECT NO. 400343

PROJECT NAME Atlas Radiata

SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015 - M / E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER: 5942.0
3R40-10	12/1/94		Composit 3SPD	X	X							X
3R40-12												
3T80-2			Composit 3SPE	X	X							X
3T80-6												
3T80-10												
3T80-12												

TOTAL NUMBER OF CONTAINERS

RELENQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	12/7/94 7:00				
RELENQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT:		SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
				[signature]	12-7-94 7:20

Advanced Technology
Laboratories

December 14, 1994

ELAP No.: 1838
Exp. Date: 12–31–94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5234–001/004

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 – 4045 if I can be of further assistance to your company.

Sincerely,

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

CHAIN OF CUSTODY RECORD

Pg 1 of 1

Advanced Technology Laboratories
1510 E. 33rd Street
Signal Hill, CA 90807
(310) 989-4045 - FAX (310) 989-4040

FOR LABORATORY USE ONLY:

Batch #: 5234 D.O. #
P.O.#:
Logged By: DC Date: 12-13-94 Time: 3:00pm

Method of Transport: Walk-in ☐ Courier ☐ UPS ☐ FED. EXP. ☐ ATL ☐

Sample Condition Upon Receipt:
CHILLED Y☐ N☐ | CONTAINER INTACT Y☐ N☐
SEALED Y☐ N☐ | # OF SPLS MATCH COC Y☐ N☐
SEAL INTACT Y☐ N☐ | * HAZARDOUS FEE Y☐ N☐
PRESERVED Y☐ N☐ | HEADSPACE(VOA) Y☐ N☐
CONTR. LOT # ____ | COOLER TEMP °C ____ (2-6)

Client: APEC
Attn: GLENN STILLMAN
Address:
City State Zip Code
TEL: ( )
FAX: ( )

Project Name: 40343 Project #: Sampler: (Printed Name) (Signature)

Relinquished by: (Signature and Printed Name) Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Received by: (Signature and Printed Name) Date: Time:
Relinquished by: (Signature and Printed Name) Received by: (Signature and Printed Name) Date: 12-13-94 Time: 7:10p

Unless otherwise requested, all samples will be disposed 60 days after receipt.

I hereby authorize ATL to perform the work indicated below:
Project Mgr /Submitter:
Print Name Date: / /
Signature

Special Instructions/Comments:
CHANGE ORDER!
THESE ARE THEIR COMPOSITE SAMPLES

SHIP TO LAB: (SUB CONTRACT) TEST: ATL #: DATE: CLIENT I.D.
SHIP TO LAB: (SUB CONTRACT) TEST: ATL #: DATE: CLIENT I.D.
SHIP TO LAB: (SUB CONTRACT) TEST: ATL #: DATE: CLIENT I.D.

Circle or Add Analysis(es) Requested: 601/8010 (Halogenated Volatiles-GC); 602/8020/BTEX (Aromatic Volatiles-GC); 608/8080 (Pesticides/PCB-GC); 624/8240/8260 (Volatiles-GC/MS); 625/8270 (BNA-GC/MS); 8015M TPH/GBTEX(COMBINATION); 8015M TPH/D (Diesel-GC); 418.1 (TPH-IR); Metals Total (CAC-6010/7000); 6010 ICP Pb

CIRCLE APPROPRIATE MATRIX: SOIL/SOLID; WATER/LIQUID; SLUDGE/OIL; GAS/AIR; WIPE/FILTER; MULTIPHASE; OTHER

ITEM	LAB USE ONLY: Batch #: / Lab No.	Sample Description: Sample I.D.	Date	Time	TAT	Container(s): #	Type	PRESERVATION
	(35PB)	5234-001 (5267-01)	12-1		B	1	G	F
	(35PC)	002 002				1		
	(35PD)	003 003				1		
	(35PC)	004 004				1		

QA/QC: RTNE ☒ RWQCB ☐ WIP ☐ NAVY ☐ CT ☐ OTHER ____

REMARKS

Sample Archive/Disposal: ☐ Laboratory Standard ☐ Other ____ ☐ Return To: ____

TAT: A= Overnight ≤ 24 hr B= Emergency Next workday C= Critical 2 Workdays D= Urgent 3 Workdays E= Routine 7 Workdays
* TAT starts 8 a.m. following day if samples received after 3 p.m.

Container Types: B=Brass V=VOA L=Liter P=Pint J=Jar T=Tedlar G=Glass P=Plastic M=Metal

Preservatives: H=HCl N=HNO_3 S=H_2SO_4 C=4°C Z=$Zn(AC)_2$ O=NaOH T=$Na_2S_2O_3$

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/13/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5234-001	3SPB	EPA 6010 (Lead)	12/07/94	12/14/94	137	Soil, mg/kg	1.0	1.0	CDR
5234-002	3SPC	EPA 6010 (Lead)	12/07/94	12/14/94	135	Soil, mg/kg	1.0	1.0	CDR
5234-003	3SPD	EPA 6010 (Lead)	12/07/94	12/14/94	79	Soil, mg/kg	1.0	1.0	CDR
5234-004	3SPE	EPA 6010 (Lead)	12/07/94	12/14/94	149	Soil, mg/kg	1.0	1.0	CDR

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 12-14-94

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: 6010 (Lead)
Analyst: CDR/OL
Data File: 4348 - 3

Date: 12/14/94
Sample ID: 5242 - 015
Matrix: Soil

ANALYTE	UNITS	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
Lead	mg/kg	ND	1.10	5.0	6.0	6.3	98	104	55 - 120	6	30	1.0

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 12/14/94

Advanced Technology Laboratories

Advanced Technology
Laboratories

December 22, 1994

ELAP No.: 1838
Exp. Date: 12–31–94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

RECEIVED
DEC 29 1994
A. P. E. E.

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5312–001/004

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 – 4045 if I can be of further assistance to your company.

Sincerely,

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/13/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5312-001	3SPB	EPA 239.1 (Lead)	12/07/94	12/22/94	ND	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5312-002	3SPC	EPA 239.1 (Lead)	12/07/94	12/22/94	ND	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5312-003	3SPD	EPA 239.1 (Lead)	12/07/94	12/22/94	0.19	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5312-004	3SPE	EPA 239.1 (Lead)	12/07/94	12/22/94	0.93	TCLP Extract, mg/l	0.15	0.15	ER/MCC

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Yantzoff
Michael A. Yantzoff
Laboratory Director

Date: 12-22-94

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: 239.1
Analyst: ER/OL
Data File: 4357-T1

Date: 12/22/94
Sample ID: See Below
Matrix: TCLP Extract

Sample ID	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPL DUP	% Dev	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
5313-005	mg/L	5	5.1	102	ND	ND	NA	NA	5.0	5.6	5.6	112	112	55 - 120	0	30	0.15

Approved by: Cheryl De Los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 12/22/94

Advanced Technology Laboratories

ALASKA PETROLEUM
ENVIRONMENTAL
ENGINEERING

MEMORANDUM
(via facsimile)

2:15pm

Date: December 21, 1994

To: Puri - Advanced Technology Laboratory, Inc.

From: R. Glenn Stillman

Re: Atlas Radiator

P.O.#: 400343

As per our conversation this morning, please analyze the following samples on a priority basis for TCLP - lead:

5269-001 through 004
5270-001 through 004
5271-001 through 011

Alaska Office
907-479-9555
P.O. Box 81904
Fairbanks, Alaska 99708

California Office
310-433-5144
FAX 310-433-9995
P.O. Box 14766
Long Beach, California 90803

Advanced Technology
Laboratories

December 9, 1994

ELAP No.: 1838
Exp. Date: 12–31–94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5215–001/075

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters:

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 – 4045 if I can be of further assistance to your company.

Sincerely,

M. Yartzoff

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/08/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5215-061	5SPA	EPA 7420 (Lead)	12/08/94	12/09/94	67	Soil, mg/kg	2.4	2.4	CDR
5215-062	5SPB	EPA 7420 (Lead)	12/08/94	12/09/94	80	Soil, mg/kg	2.4	2.4	CDR
5215-063	5SPC	EPA 7420 (Lead)	12/08/94	12/09/94	89	Soil, mg/kg	2.4	2.4	CDR
5215-064	5SPD	EPA 7420 (Lead)	12/08/94	12/09/94	145	Soil, mg/kg	2.4	2.4	CDR
5215-065	5SPE	EPA 7420 (Lead)	12/08/94	12/09/94	182	Soil, mg/kg	2.4	2.4	CDR
5215-066	4SPA	EPA 7420 (Lead)	12/08/94	12/09/94	120	Soil, mg/kg	2.4	2.4	CDR
5215-067	4SPB	EPA 7420 (Lead)	12/08/94	12/09/94	93	Soil, mg/kg	2.4	2.4	CDR
5215-068	4SPC	EPA 7420 (Lead)	12/08/94	12/09/94	55	Soil, mg/kg	2.4	2.4	CDR
5215-069	4SPD	EPA 7420 (Lead)	12/08/94	12/09/94	124	Soil, mg/kg	2.4	2.4	CDR
5215-070	4SPE	EPA 7420 (Lead)	12/08/94	12/09/94	179	Soil, mg/kg	2.4	2.4	CDR
5215-071	2SPA	EPA 7420 (Lead)	12/08/94	12/09/94	53	Soil, mg/kg	2.4	2.4	CDR
5215-072	2SPB	EPA 7420 (Lead)	12/08/94	12/09/94	96	Soil, mg/kg	2.4	2.4	CDR
5215-073	2SPC	EPA 7420 (Lead)	12/08/94	12/09/94	40	Soil, mg/kg	2.4	2.4	CDR
5215-074	2SPD	EPA 7420 (Lead)	12/08/94	12/09/94	27	Soil, mg/kg	2.4	2.4	CDR
5215-075	2SPE	EPA 7420 (Lead)	12/08/94	12/09/94	76	Soil, mg/kg	2.4	2.4	CDR

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 12-13-94

The cover letter is an integral part of this analytical report.

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14706
LONG BEACH, CALIFORNIA
(213) 433-5144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-0555 90708

TURNAROUND TIME: 24 hr TAT

P/Q Fax Results as available

PROJECT NO. 400343

PROJECT NAME Atlas Radiator

SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID (SOLID)	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015 - M / E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER: Pb 7420
SSPA-2	12/8/94		SSPA	X	X							X
SSPA-4												
SSPA-6												
SSPA-8												
SSPB-2												
SSPB-4			SSPB									
SSPB-6												
SSPB-8												
SSPC-3				X	X							X
SSPC-6			need PQ									

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	12/9/94	Michael Esrl		12/9/94 6:40	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT:		SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

3/6

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14765
LONG BEACH, CALIFORNIA
(213) 433-5144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-0555 99708

TURNAROUND TIME:
24 hr TAT
Fax Results
P/Q

PROJECT NO. | PROJECT NAME | SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015 - M / E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER: B7920
4SPA-3	12/8/94		4SPA	X	X							X
4SPA-6				X	X							X
4SPA-9				X	X							X
4SPA-12				X	X							X
4SPB-3			4SPB	X	X							X
4SPB-6				X	X							X
4SPB-9				X	X							X
4SPB-12				X	X							X
4SPC-3				X	X							X
4SPC-6			Hold	X	X							X

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	12/8/94	Michael Espe			
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

4/6

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14766
LONG BEACH, CALIFORNIA
(213) 433-5144 90803
FAX: (213) 433-5998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-8555 99708

TURNAROUND TIME:

P/Q 24 hr TAT
Fax Results

PROJECT NO. | PROJECT NAME

SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID (SOLID)	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015 - M / E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER: Pb 7420
4SPC-9	12/8/94		4 SPL	X	X							X
4SPC-12												
4SPD-3												
4SPD-6			4 SPD									
4SPD-9												
4SPD-12												
4SPE-3												
4SPE-6			4 SPE									
4SPE-9												
4SPE-12												

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	12/8/94	Michael Espinosa			
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT:		SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

5/6

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14769
LONG BEACH, CALIFORNIA
(213) 433-6144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-8555 99708

TURNAROUND TIME: 24 hr TAT

P/Q Fax Results

PROJECT NO. 400343

PROJECT NAME Atlas Radar

SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015-M/E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER: Pb 7420
2SPA-3	12/8/94		2SPA									
2SPA-6												
2SPA-9												
2SPA-12												
2SPB-3			2SPB									
2SPB-6												
2SPB-9												
2SPB-12												
2SPB-3			next									
2SPC-6												

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	12/8/94	Michael Esm			
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT:		SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14760
LONG BEACH, CALIFORNIA
(213) 433-5144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-9555 99708

TURNAROUND TIME: 24hr TAT

P/Q Jaso Roulet

PROJECT NO.	PROJECT NAME	SAMPLERS: (Signature)
400343	Allan Rodkiller	[signature]

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015 - M / E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER: Pb 7420	OTHER
2SPC-9	12/8/94		2SPC	X	X							X	
2SPC-12	(			X	X							X	
2SPD-3			2SPD	X	X							X	
2SPD-6				X	X							X	
2SPD-9				X	X							X	
2SPD-12				X	X							X	
2SPE-3			2SPE	X	X							X	
2SPE-6				X	X							X	
2SPE-9				X	X							X	
2SPE-12				X	X							X	

TOTAL NUMBER OF CONTAINERS:

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	12/8/94	Michael Esten			
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

Advanced Technology Laboratories

RECEIVED
DEC 19 1994
A.P.E.E.

December 14, 1994

ELAP No.: 1838
Exp. Date: 12-31-94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5242-001/015

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/08/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5242-001	5SPA	EPA 6010 (Lead)	12/08/94	12/14/94	55	Soil, mg/kg	1.0	1.0	CDR
5242-002	5SPB	EPA 6010 (Lead)	12/08/94	12/14/94	72	Soil, mg/kg	1.0	1.0	CDR
5242-003	5SPC	EPA 6010 (Lead)	12/08/94	12/14/94	81	Soil, mg/kg	1.0	1.0	CDR
5242-004	5SPD	EPA 6010 (Lead)	12/08/94	12/14/94	135	Soil, mg/kg	1.0	1.0	CDR
5242-005	5SPE	EPA 6010 (Lead)	12/08/94	12/14/94	177	Soil, mg/kg	1.0	1.0	CDR
5242-006	4SPA	EPA 6010 (Lead)	12/08/94	12/14/94	114	Soil, mg/kg	1.0	1.0	CDR
5242-007	4SPB	EPA 6010 (Lead)	12/08/94	12/14/94	83	Soil, mg/kg	1.0	1.0	CDR
5242-008	4SPC	EPA 6010 (Lead)	12/08/94	12/14/94	48	Soil, mg/kg	1.0	1.0	CDR
5242-009	4SPD	EPA 6010 (Lead)	12/08/94	12/14/94	107	Soil, mg/kg	1.0	1.0	CDR
5242-010	4SPE	EPA 6010 (Lead)	12/08/94	12/14/94	180	Soil, mg/kg	1.0	1.0	CDR
5242-011	2SPA	EPA 6010 (Lead)	12/08/94	12/14/94	43	Soil, mg/kg	1.0	1.0	CDR
5242-012	2SPB	EPA 6010 (Lead)	12/08/94	12/14/94	77	Soil, mg/kg	1.0	1.0	CDR
5242-013	2SPC	EPA 6010 (Lead)	12/08/94	12/14/94	29	Soil, mg/kg	1.0	1.0	CDR
5242-014	2SPD	EPA 6010 (Lead)	12/08/94	12/14/94	17	Soil, mg/kg	1.0	1.0	CDR
5242-015	2SPE	EPA 6010 (Lead)	12/08/94	12/14/94	56	Soil, mg/kg	1.0	1.0	CDR

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 12-14-94

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: 6010 (Lead)
Analyst: CDR/OL
Data File: 4348 - 3

Date: 12/14/94
Sample ID: 5242 - 015
Matrix: Soil

ANALYTE	UNITS	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
Lead	mg/kg	ND	1.10	5.0	6.0	6.3	98	104	55 - 120	6	30	1.0

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 12/14/94

Advanced Technology Laboratories

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING
P. O. BOX 14704, LONG BEACH, CALIFORNIA (213) 433-6144 90803, FAX: (213) 433-6998
P. O. BOX 81904, FAIRBANKS, ALASKA (907) 479-0555 99708

TURNAROUND TIME: 24 hr TAT

P/Q Fax Results as available

PROJECT NO. 400343

PROJECT NAME Atlas Radiator

SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	FUEL HC 8015 - M / E	PETROLEUM HC 418.1	BTXE 8020	VOLATILE ORGANICS 624 / 8240	EXTRACTABLE ORGANICS 625 / 8270	CCR METALS TOTAL	OTHER: Pb 7420	
5215-001 SSPA-2	12/8/94		SSPA 067 composite out 5243	X	X							X	
002 SSPA-4				X	X							X	
003 SSPA-6				X	X							X	
004 SSPA-8				X	X							X	
005 SSPB-2			SSPB 067 composite out	X	X							X	
006 SSPB-4				X	X							X	
007 SSPB-6				X	X							X	
008 SSPB-8				X	X							X	
009 SSPC-3			needed	X	X							X	
010 SSPC-6				X	X							X	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	12/8/94 4:50	Michael Esrel		12/8/94 6:40	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

CHAIN OF CUSTODY

2/1

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14709
LONG BEACH, CALIFORNIA
(213) 433-6144 90803
FAX: (213) 433-6996

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-0568 99708

TURNAROUND TIME:

24 hr TAT

P/Q fax results

PROJECT NO. | PROJECT NAME

SAMPLERS: (Signature)

	SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015 - M / E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER
5215-011	5SPC-8	12/8/94		5 SPC (063) composite 5242 003									
012	5SPC-10												
013	5SPD-3												
014	5SPD-6												
015	5SPD-9			5 SPD (064) composite only									
016	5SPD-12												
017	5SPE-3												
018	5SPE-6			5 SPE (065) composite only									
019	5SPE-9												
020	5SPE-12												

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	12/8/94	Michael Espe L		1	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT:		SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

3/6

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14700
LONG BEACH, CALIFORNIA
(213) 433-5144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-0555 99708

TURNAROUND TIME: 24 hr TAT

P/Q Fax Results

PROJECT NO.

PROJECT NAME

SAMPLERS: (Signature) [signature]

	SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	LIQUID / SOLID	GLASS / PLASTICS / BRASS / SS	FUEL HC 8015 - M / E	PETROLEUM HC 418.1	BTXE 8020	VOLATILE ORGANICS 624 / 8240	EXTRACTABLE ORGANICS 625 / 8270	CCR METALS TOTAL	Pb 7420	
5215-021	4SPA-3	12/8/94		4SPA (066) composite 5242 006	X	X							X	
022	4SPA-6				X	X							X	
023	4SPA-9				X	X							X	
024	4SPA-12				X	X							X	
025	4SPB-3			4SPB (067) 007	X	X							X	
026	4SPB-6				X	X							X	
027	4SPB-9				X	X							X	
028	4SPB-12				X	X							X	
029	4SPC-3				X	X							X	
030	4SPC-6			nothing	X	X							X	

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	12/8/94	Michael Esh			
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

4/6

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14766
LONG BEACH, CALIFORNIA
(213) 433-5144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-8555 90708

TURNAROUND TIME: 24 h TAT

P/O Lab Results

PROJECT NO. | PROJECT NAME | SAMPLERS: (Signature)

	SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID (SOLID)	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015 - M / E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER: PA 7420
215-031	4SPC-9	12/8/94		4 SPL (068) composite, 5242 SUB	X	X							X
032	4SPC-12												
033	4SPD-3												
034	4SPD-6			4 SPD (069) composite 1 0695									
035	4SPD-9												
036	4SPD-12												
037	4SPE-3												
038	4SPE-6			4 SPE (070) composite 5242									
039	[illegible]												
040	4SPE-12												

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	12/8/94	Michael Espil			
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

5/6

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14700
LONG BEACH, CALIFORNIA
(213) 433-6144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-9555 99708

TURNAROUND TIME: 24 hr TAT

P/O Fax Results

PROJECT NO. 400343

PROJECT NAME Ethan Radatz

SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015—M / E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER
X15-011 2SPA-3	12/5/94		2SPA (07) composite 5-24 oil									
012 2SPA-6												
013 2SPA-9												
014 2SPA-12												
015 2SPB-3												
016 2SPB-6			2SPB (07) composite 0-12'									
017 2SPB-9												
018 2SPB-12												
019 [illegible]												
050 [illegible]												

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	12/8/94	Michael Espe			
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

6/6

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14760
LONG BEACH, CALIFORNIA
(213) 433-6144 90803
FAX: (213) 433-6996

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-0555 99708

TURNAROUND TIME: 24hr TAT

P/Q Jane Routh

PROJECT NO. 400343

PROJECT NAME Allan Rockliff

SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015 - M / E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL	OTHER: Pb TPH 7420
15-051 2SPC-9	12/8/94		2SPC (0.73) composite 15242 0013									
052 2SPC-12												
053 2SPD-3												
054 2SPD-6			2SPD (0.5) composite 0.14									
055 2SPD-9												
056 2SPD-12												
057 2SPE-3												
058 2SPE-6			2SPE (0.75) composite 015									
059 2SPE-9												
060 2SPE-12												

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	12/8/94	Michael Esgar			
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME

Advanced Technology
Laboratories

December 22, 1994

ELAP No.: 1838
Exp. Date: 12–31–94

RECEIVED
DEC 29 1994
A. P. E. E.

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5313–001/011

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 – 4045 if I can be of further assistance to your company.

Sincerely,

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/08/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5313-001	5SPA	EPA 239.1 (Lead)	12/08/94	12/22/94	1.8	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5313-002	5SPB	EPA 239.1 (Lead)	12/08/94	12/22/94	ND	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5313-003	5SPC	EPA 239.1 (Lead)	12/08/94	12/22/94	ND	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5313-004	5SPD	EPA 239.1 (Lead)	12/08/94	12/22/94	0.24	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5313-005	5SPE	EPA 239.1 (Lead)	12/08/94	12/22/94	ND	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5313-006	4SPA	EPA 239.1 (Lead)	12/08/94	12/22/94	0.16	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5313-007	4SPB	EPA 239.1 (Lead)	12/08/94	12/22/94	ND	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5313-008	4SPD	EPA 239.1 (Lead)	12/08/94	12/22/94	0.19	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5313-009	4SPE	EPA 239.1 (Lead)	12/08/94	12/22/94	0.23	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5313-010	2SPB	EPA 239.1 (Lead)	12/08/94	12/22/94	0.54	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5313-011	2SPE	EPA 239.1 (Lead)	12/08/94	12/22/94	ND	TCLP Extract, mg/l	0.15	0.15	ER/MCC

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Hartzoff
Michael A. Hartzoff
Laboratory Director

Date: 12-22-94

The cover letter is an integral part of this analytical report.

Advanced Technology
Laboratories

December 14, 1994

ELAP No.: 1838
Exp. Date: 12–31–94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5232–001/005

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 – 4045 if I can be of further assistance to your company.

Sincerely,

M. Yartzoff

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/07/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5232-001	6SPA	EPA 6010 (Lead)	12/07/94	12/14/94	81	Soil, mg/kg	1.0	1.0	CDR
5232-002	6SPB	EPA 6010 (Lead)	12/07/94	12/14/94	89	Soil, mg/kg	1.0	1.0	CDR
5232-003	6SPC	EPA 6010 (Lead)	12/07/94	12/14/94	73	Soil, mg/kg	1.0	1.0	CDR
5232-004	6SPD	EPA 6010 (Lead)	12/07/94	12/14/94	48	Soil, mg/kg	1.0	1.0	CDR
5232-005	6SPE	EPA 6010 (Lead)	12/07/94	12/14/94	67	Soil, mg/kg	1.0	1.0	CDR

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 12-14-94

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: 6010 (Lead)
Analyst: CDR/OL
Data File: 4348 - 3

Date: 12/14/94
Sample ID: 5242 - 015
Matrix: Soil

ANALYTE	UNITS	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
Lead	mg/kg	ND	1.10	5.0	6.0	6.3	98	104	55 - 120	6	30	1.0

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 12/14/94

Advanced Technology Laboratories

CHAIN OF CUSTODY

2

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14708, LONG BEACH, CALIFORNIA (213) 433-5144 90803 — FAX: (213) 433-4996

P. O. BOX 81904, FAIRBANKS, ALASKA (907) 479-0555 90708

TURNAROUND TIME: 24 hours for results as available

P/Q

PROJECT NO. 400343 | PROJECT NAME Atlas Radiator | SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015 - M/E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: TOTAL METALS	OTHER: ICP 6010 Pb
6KN-30	12/7/94	~~NO~~ - 6KM-30	Composit into one Sample 6SPC									X
1 6NQ-10		~~6KM-10~~										↓
6DG-70												X
6KN-50		~~NO~~ - 6KM-50	Composit into one Sample 6SPD									—
2 6NQ-50												↓
6AC-70												↓
6DG-50												X
3 6HJ-90		- 6KM-90	Composit into one Sample 6SPD									—
4 6NJ-70		- 6KM-70										↓
6HJ-30												↓

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	12/7/94 6:15p				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT:		SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME 12-7-94 7:30p

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/07/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5269-001	6SPA	EPA 7420 (Lead)	12/07/94	12/19/94	2.4	STLC Extract, mg/l	0.15	0.15	ER
5269-002	6SPB	EPA 7420 (Lead)	12/07/94	12/19/94	4.5	STLC Extract, mg/l	0.15	0.15	ER
5269-003	6SPC	EPA 7420 (Lead)	12/07/94	12/19/94	2.6	STLC Extract, mg/l	0.15	0.15	ER
5269-004	6SPD	EPA 7420 (Lead)	12/07/94	12/19/94	3.5	STLC Extract, mg/l	0.15	0.15	ER

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 12-19-94

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Spike Recovery and RPD Summary Report

Method: 7420
Analyst: ER
Data File: 4353-GC1

Date: 12/19/94
Sample ID: See Below
Matrix: STLC Extract
(Digestion Factor:100/10)

Sample ID	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPL DUP	% Dev	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
5259-002	mg/L	5.0	4.9	98	ND	5.3	6.0	12	5.0	8.5	8.1	64	56	55 - 120	14	30	0.15
5260-008	mg/L	5.0	4.7	94	ND	2.7	2.6	4	5.0	5.5	5.6	57	57	55 - 120	1	30	0.15
5261-010	mg/L	5.0	4.7	94	ND	18	16	11	20	39	38	105	100	55 - 120	5	30	0.15
*5261-020	mg/L	5.0	4.0	80	ND	30	35	14	5.0	33	35	60	100	55 - 120	50	30	0.15
5270-004	mg/L	5.0	4.9	98	ND	12	11	9	5.0	17	17	100	100	55 - 120	0	30	0.15
**5271-010	mg/L	5.0	4.7	94	ND	3.1	3.2	3	5.0	5.7	6.3	52	64	55 - 120	21	30	0.15

*High RPD due to sample nonhomogeneity.
**Low spike recoveries due to sample matrix interference.

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 12/19/94

Advanced Technology Laboratories

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING
P. O. BOX 14765 LONG BEACH, CALIFORNIA (213) 433-6144 90803 FAX (213) 433-6665
P. O. BOX 81951 FAIRBANKS, ALASKA 99708

TURNAROUND TIME: 24 hours

P/O: from results are available

PROJECT NO.	PROJECT NAME	SAMPLERS: (Signature)
40043	Atlas Radiator	[signature]

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	LIQUID / SOLID	GLASS / PLASTICS / BRASS / SS	FUEL HC 8015 - M/E	PETROLEUM HC 418.1	BTXE 5020	VOLATILE ORGANICS 624 / 8240	EXTRACTABLE ORGANICS 625 / 8270	CCR METALS TOTAL	OTHER
6AC-30	12/7/94											
6HJ-50			5232				5264					
6HJ-90			Composit into one Sample 6SPA 001				001					
6NQ-70												
6AC-90												
6HJ-70			002				5264					
6DG-30			Composit into one Sample 6SPB				002					
6NQ-30												
[illegible]												
6NG-9[illegible]			[illegible]									

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	12/7/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT:		SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
				[signature]	[illegible]

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING
P. O. BOX 14700 LONG BEACH, CALIFORNIA (213) 433-6144 90801 FAX: (213) 433-6098
P. O. BOX 81904 FAIRBANKS, ALASKA (907) 479-0055 99708

TURNAROUND TIME: 24 hours
fax results as available
P/O

PROJECT NO.	PROJECT NAME	SAMPLERS: (Signature)
400343	Atlas Rainbow	[signature]

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	LIQUID / SOLID	GLASS / PLASTICS / BRASS / SS	FUEL HC 8015 - M / E	PETROLEUM HC 418.1	BTXE 8020	VOLATILE ORGANICS 624 / 8240	EXTRACTABLE ORGANICS 625 / 8270	METALS TOTAL / PB	ICP / 6010 / PB
6KN-30	12/7/94	NO - 6KM30	Composit into one Sample 6SPC 5232 003				5269 003					X
6NQ-40	- 6KM-90											X
6DG-70												X
6KN-50		NO - 6KM50	Composit into one Sample 6SPD 004									
6NQ-50												
6AC-70												X
6DG-50												X
6MJ-90	- 6KM-90		Composit into one Sample 6SPE 005				5269 004					
[illegible]	- 6KM-70											
[illegible]												X

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	12/7/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
			[signature]	[illegible]

Advanced Technology Laboratories

December 22, 1994

ELAP No.: 1838
Exp. Date: 12–31–94

RECEIVED
DEC 29 1994
A.P.E.E.

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5311–001/004

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters in the enclosed chain of custody.

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 – 4045 if I can be of further assistance to your company.

Sincerely,

M. Yartzoff

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/07/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5311-001	6SPA	EPA 239.1 (Lead)	12/07/94	12/22/94	ND	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5311-002	6SPB	EPA 239.1 (Lead)	12/07/94	12/22/94	ND	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5311-003	6SPC	EPA 239.1 (Lead)	12/07/94	12/22/94	1.7	TCLP Extract, mg/l	0.15	0.15	ER/MCC
5311-004	6SPE	EPA 239.1 (Lead)	12/07/94	12/22/94	ND	TCLP Extract, mg/l	0.15	0.15	ER/MCC

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 12-22-94

The cover letter is an integral part of this analytical report.

ALASKA PETROLEUM
ENVIRONMENTAL
ENGINEERING

MEMORANDUM
(via facsimile)

2:15pm

Date: December 21, 1994

To: Puri - Advanced Technology Laboratory, Inc.

From: R. Glenn Stillman

Re: Atlas Radiator

P.O.#: 400343

As per our conversation this morning, please analyze the following samples on a priority basis for TCLP - lead:

5269-001 through 004
5270-001 through 004
5271-001 through 011

Alaska Office
907•479-9555
P.O. Box 81904
Fairbanks, Alaska 99708

California Office
310•433-5144
FAX 310•433-6995
P.O. Box 14766
Long Beach, California 90803

Table VII
Base of Excavation/Secondary Infill Analysis

Table VIII
Second Lift/Secondary Infill Analysis

and
Laboratory Analytical Reports

Table VII
Base of Excavation/Secondary Infill Analysis

Sample Identification	Depth (ft)	Number of Discrete Samples	Analytical Results (ppm)	
			6010	239.1
Composite 1	5	4	99	ND
Composite 2	5	4	111	ND
Composite 3	5	4	76	ND
Composite 4	5	4	76	ND
Composite 5	5	4	34	ND

ft = feet
ppm = parts per million
6010 = Total lead
239.1 = TCLP (Toxicity Characteristic Leaching Procedure)
ND = Not Detected

Table VIII
Second Lift/Secondary Infill Analysis

Sample Identification	Depth (ft)	Number of Discrete Samples	Analytical Results (ppm)	
			6010	239.1
Composite 1	3.5	4	104	ND
Composite 2	3.5	4	64	ND
Composite 3	3.5	4	379	ND
Composite 4	3.5	4	59	ND
Composite 5	3.5	4	389	ND

ft = feet
ppm = parts per million
6010 = Total lead
239.1 = TCLP (Toxicity Characteristic Leaching Procedure)
ND = Not Detected

Advanced Technology
Laboratories

December 30, 1994

ELAP No.: 1838
Exp. Date: 12–31–94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5378–001/025

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters in the enclosed chain of custody.

Composite No. 1 consists of: E3 – 5, J5 – 5, D13 – 5, J14 – 5
Composite No. 2 consists of: F14 – 5, D7 – 5, I7 – 5, I12 – 5
Composite No. 3 consists of: K15 – 5, E6 – 5, I4 – 5, F9 – 5
Composite No. 4 consists of: G3 – 5, G12 – 5, K3 – 5, D10 – 5
Composite No. 5 consists of: C11 – 5, G8 – 5, H10 – 5, K10 – 5

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 – 4045 if I can be of further assistance to your company.

Sincerely,

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/29/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5378-021	Comp 1	EPA 6010 (Lead)	12/29/94	12/30/94	99	Soil, mg/kg	1.0	1.0	ER/OL
5378-022	Comp 2	EPA 6010 (Lead)	12/29/94	12/30/94	111	Soil, mg/kg	1.0	1.0	ER/OL
5378-023	Comp 3	EPA 6010 (Lead)	12/29/94	12/30/94	76	Soil, mg/kg	1.0	1.0	ER/OL
5378-024	Comp 4	EPA 6010 (Lead)	12/29/94	12/30/94	76	Soil, mg/kg	1.0	1.0	ER/OL
5378-025	Comp 5	EPA 6010 (Lead)	12/29/94	12/30/94	34	Soil, mg/kg	1.0	1.0	ER/OL

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 12-30-94

The cover letter is an integral part of this analytical report.

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/29/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5378-021	Comp 1	EPA 239.1 (Lead)	12/29/94	01/04/95	ND	TCLP Extract, mg/l	0.15	0.15	MCC
5378-022	Comp 2	EPA 239.1 (Lead)	12/29/94	01/04/95	ND	TCLP Extract, mg/l	0.15	0.15	MCC
5378-023	Comp 3	EPA 239.1 (Lead)	12/29/94	01/04/95	ND	TCLP Extract, mg/l	0.15	0.15	MCC
5378-024	Comp 4	EPA 239.1 (Lead)	12/29/94	01/04/95	ND	TCLP Extract, mg/l	0.15	0.15	MCC

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Yartzoff
Michael A. Yartzoff
Laboratory Director

Date: 1-6-95

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: 6010
Analyst: ER/OL
Data File: 4367-1
Analyte: Lead

Date: 12/30/94
Sample ID: See Below
Matrix: Soil
(Digestion Factor:100/2)

Sample ID	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPL DUP	% Dev	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
5378-025	mg/kg	5.0	NA	NA	ND	0.68	NA	NA	5.0	6.4	6.5	114	116	55 - 120	2	30	1.0

Approved by: _____
Cheryl De Los Reyes
Inorganics Supervisor

Date: 12-30-94

Advanced Technology Laboratories

Spike Recovery and RPD Report

Method: 239.1
Analyst: KS/OL
Data File: 5004-4

Date: 01/04/95
Sample ID: 5378-021
Matrix: TCLP Extract

Analyte	UNITS	LCS Conc	LCS Rec	% Rec	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
Lead	mg/L	10	9.1	91	ND	ND	5.0	3.7	4.0	75	80	55 - 120	7	30	0.15

Approved by: _____
Cheryl De Los Reyes
Inorganics Supervisor

Date: 1-6-95

Advanced Technology Laboratories

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14766
LONG BEACH, CALIFORNIA
(213) 433-5144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-8555 99708

TURNAROUND TIME: Priority TAT, fax results ASAP

P/Q

PROJECT NO.: 400343

PROJECT NAME: Atlas Radiator

SAMPLERS: (Signature) [signature]

Handwritten at top right: 239.1 (TCLP Pb c.i.)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	FUEL HC 8015 - M / E	PETROLEUM HC 418.1	BTXE 8020	VOLATILE ORGANICS 624 / 8240	EXTRACTABLE ORGANICS 625 / 8270	CCR METALS TOTAL 6010 Pb only	OTHER: if > 50 ppm 6010 analyze
E3 -5	12-29-94			X	X							
K6 -5	↓		composite into 1 sample then analyze	↓	↓							
D13 -5	↓			↓	↓							
J14 -5	↓			↓	↓							
F14 -5	↓			↓	↓							
D7 -5	↓		composite into 1 sample then analyze	↓	↓							
I7 -5	↓			↓	↓							
I12 -5	↓			↓	↓							
K13 -5	↓		cont. next page; composite into 1 sample then analyze	↓	↓							
E6 -5	12-29-94			X	X							

TOTAL NUMBER OF CONTAINERS: 10

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	1306 12/29/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk-in			[signature]	12-29-94 3:10pm

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14766
LONG BEACH, CALIFORNIA
(213) 433-5144 90803
FAX: (213) 433-6998

P. O. BOX 61904
FAIRBANKS, ALASKA
(907) 479-8555 99708

TURNAROUND TIME: Priority TAT, fax multi AIAP

P/Q

PROJECT NO.	PROJECT NAME	SAMPLERS: (Signature)
400343	Atlas Radiator	[signature]

Analysis columns: TYPE: LIQUID / SOLID; GLASS / PLASTICS / BRASS / SS. ANALYSIS: FUEL HC 8015 - M/E; PETROLEUM HC 418.1; BTXE 8020; VOLATILE ORGANICS 624/8240; EXTRACTABLE ORGANICS 625/8270; CCR METALS TOTAL ~~6010~~, Pb only. OTHER: if 750 ppm 6010, analyze 239.1 TCLP Pb

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	LIQUID / SOLID	GLASS / PLASTICS / BRASS / SS	FUEL HC 8015 - M/E	PETROLEUM HC 418.1	BTXE 8020	VOLATILE ORGANICS 624/8240	EXTRACTABLE ORGANICS 625/8270	CCR METALS TOTAL	OTHER	
I4 -5	12-29-94		cont, Al composite into 1 sample then analyze	X	X						X		
F9 -5	↓			↓	↓								
G3 -5			composite into 1 sample then analyze								X		
G12 -5													
K3 -5													
D10 -5													
C11 -5			composite into 1 sample then analyze								X		
G8 -5													
H10 -5	↓			↓	↓								
~~K~~D10 -5	12-29-94			X	X								

TOTAL NUMBER OF CONTAINERS: 10

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	1506 12-29-94	[signature]			
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk-in			[signature]	12-29-94 3:10pm

Advanced Technology
Laboratories

December 30, 1994

ELAP No.: 1838
Exp. Date: 12-31-94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5386-001/025

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters in the enclosed chain of custody.

Composite No. 1 consists of: K3 – 3.5, G7 – 3.5, D11 – 3.5, K14 – 3.5
Composite No. 2 consists of: D4 – 3.5, K7 – 3.5, J16 – 3.5, F11 – 3.5
Composite No. 3 consists of: H3 – 3.5, I8 – 3.5, F15 – 3.5, E8 – 3.5
Composite No. 4 consists of: I11 – 3.5, J5 – 3.5, E13 – 3.5, K1L – 3.5
Composite No. 5 consists of: H10 – 3.5, F4 – 3.5, H14 – 3.5

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 – 4045 if I can be of further assistance to your company.

Sincerely,

Michael A. Yartzoff
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Mailing Address: P.O. Box 9108 Newport Beach, CA 92658
1500 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/30/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results,	Matrix, Units	MDL	DLR	Analyst Initials
5386-021	Comp 1	EPA 6010 (Pb)	12/29/94	12/30/94	104	Solid, mg/kg	1.0	1.0	ER/OL
5386-022	Comp 2	EPA 6010 (Pb)	12/29/94	12/30/94	64	Solid, mg/kg	1.0	1.0	ER/OL
5386-023	Comp 3	EPA 6010 (Pb)	12/29/94	12/30/94	379	Solid, mg/kg	1.0	1.0	ER/OL
5386-024	Comp 4	EPA 6010 (Pb)	12/29/94	12/30/94	59	Solid, mg/kg	1.0	1.0	ER/OL
5386-025	Comp 5	EPA 6010 (Pb)	12/29/94	12/30/94	389	Solid, mg/kg	1.0	1.0	ER/OL

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. YanJoff
Michael A. Yanzoff
Laboratory Director

Date: 12-30-94

The cover letter is an integral part of this analytical report.

Advanced Technology Laboratories
1510 E. 33rd Street Signal Hill, CA 90807 Tel: 310 989-4045 Fax: 310 989-4040

Client: Alaska Petroleum Environmental Engineering
Attn: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343

Date Received: 12/30/94

Lab No.	Sample I.D.	Analysis	Date Sampled	Date Analyzed	Results	Matrix, Units	MDL	DLR	Analyst Initials
5386-021	Comp 1	EPA 239.1 (Lead)	12/29/94	01/04/95	ND	TCLP Extract, mg/l	0.15	0.15	MCC
5386-022	Comp 2	EPA 239.1 (Lead)	12/29/94	01/04/95	ND	TCLP Extract, mg/l	0.15	0.15	MCC
5386-023	Comp 3	EPA 239.1 (Lead)	12/29/94	01/04/95	ND	TCLP Extract, mg/l	0.15	0.15	MCC
5386-024	Comp 4	EPA 239.1 (Lead)	12/29/94	01/04/95	ND	TCLP Extract, mg/l	0.15	0.15	MCC
5386-025	Comp 5	EPA 239.1 (Lead)	12/29/94	01/04/95	ND	TCLP Extract, mg/l	0.15	0.15	MCC

MDL = Method Detection Limit
ND = Not Detected (Below DLR)
DF = Dilution Factor (DLR/MDL)

Reviewed/Approved By: M. Yanzoff
Michael A. Yanzoff
Laboratory Director

Date: 1-6-95

The cover letter is an integral part of this analytical report.

Spike Recovery and RPD Report

Method: 239.1
Analyst: KS/OL
Data File: 5004-4

Date: 01/04/95
Sample ID: 5378-021
Matrix: TCLP Extract

Analyte	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
Lead	mg/L	10	9.1	91	ND	ND	5.0	3.7	4.0	75	80	55 - 120	7	30	0.15

Approved by: _____
Cheryl De Los Reyes
Inorganics Supervisor

Date: 1/6/95

Advanced Technology Laboratories

Spike Recovery and RPD Summary Report

Method: 6010
Analyst: ER/OL
Data File: 4367-1
Analyte: Lead

Date: 12/30/94
Sample ID: See Below
Matrix: Soil
(Digestion Factor:100/2)

Sample ID	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPL DUP	% Dev	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
5378-025	mg/kg	5.0	NA	NA	ND	0.68	NA	NA	5.0	6.4	6.5	114	116	55 - 120	2	30	1.0

Approved by: _____
Cheryl De Los Reyes
Inorganics Supervisor

Date: 12-30-94

Advanced Technology Laboratories

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14756
LONG BEACH, CALIFORNIA
(213) 433-6144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-8555 90708

TURNAROUND TIME: Priority TAT, fax multi ASAP
P/Q

PROJECT NO.	PROJECT NAME	SAMPLERS: (Signature)
400343	Atlas Applicator	[signature]

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	FUEL HC 8015 - M/E	PETROLEUM HC 418.1	BTXE 8020	VOLATILE ORGANICS 624 / 8240	EXTRACTABLE ORGANICS 625 / 8270	CCR METALS TOTAL 6010 Pb only	OTHER: If > 50 ppm Pb analyze TCLP Pb	OTHER
F15-3.5	12-29-94		Cont from last page	X	X						X		
E8-3.5	12-29-94			X	X						X		
D15-3.5	12-29-94			X	X						X		
I11-3.5	12-29-94		Composite into 1 sample then analyze	X	X						X		
J5-3.5	12-30-94			X	X						X		
E13-3.5	12-29-94			X	X						X		
K12-3.5	12-29-94			X	X						X		
H10-3.5	12-29-94		composite into 1 sample then analyze	X	X						X		
F4-3.5	12-30-94			X	X						X		
H14-3.5	12-29-94			X	X						X		

TOTAL NUMBER OF CONTAINERS: 10

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	12/30/94				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk-in			Maria Pomerco	12-30-94

TCLP Pb only 239.1

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14766
LONG BEACH, CALIFORNIA
(213) 433-6144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-8555 99708

TURNAROUND TIME:
Priority TAT,
fax result, ASAP

P/Q

PROJECT NO. 400743

PROJECT NAME AFAG Radiator

SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID/SOLID	TYPE: GLASS/PLASTICS/BRASS/SS	ANALYSIS: FUEL HC 8015 - M/E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624/8240	ANALYSIS: EXTRACTABLE ORGANICS 625/8270	ANALYSIS: CCR METALS TOTAL 6010 only	OTHER: if 7.50 ppm Pb analyze 239.1 (TCLP only)
K3 -3.5	12-30-94		Composite into 1 sample then analyze	X	X							
G7 -3.5	12-29-94				X							
D11 -3.5	12-29-94											
K14 -3.5	12-29-94											
D4 -3.5	12-30-94		composite into 1 sample then analyze									
K7 -3.5	12-29-94											
J16-3.5	12-29-94											
F11 -3.5	12-29-94											
H3 -3.5	12-30-94		composit into 1 sample then									
I8 3.5	12-29-94		analyze CONT NEXT PAGE	X	X							

TOTAL NUMBER OF CONTAINERS: 10

RELENQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	12/30/94				
RELENQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
Walk-in			Maria Ramos	12-30-94

Table IX
Third Lift/Secondary Infill Analysis

and
Laboratory Analytical Reports

Table IX
Third Lift/Secondary Infill Analysis

Sample Identification	Depth (ft)	Number of Discrete Samples	Analytical Results (ppm)
			6010
Composite 1	2	4	104
Composite 2	2	4	136
Composite 3	2	4	117
Composite 4	2	4	107
Composite 5	2	4	120

ft = feet
ppm = parts per million
6010 = Total lead

Advanced Technology
Laboratories

FEB 14 1995
A. P. E. E.

February 6, 1995

ELAP No.: 1838
Exp. Date: 12-31-94

Alaska Petroleum Environmental Engineering
P.O. Box 14766
Long Beach, CA 90803

ATTN: Mr. Glenn Stillman

Client's Project: Atlas Radiator, 400343
Lab No.: 5702-001/025

Gentlemen:

Enclosed are the results for sample(s) received by Advanced Technology Laboratories and tested for the following parameters in the enclosed chain of custody.

Composite 1 consists of H5-2,K11-2,E16-2,H2-2
Composite 2 consists of K7-2, E9-2, J14-2, L2-2
Composite 3 consists of F3-2, C9-2, I12-2, J4-2
Composite 4 consists of D5-2, G10-2, D12-2, F7-2
Composite 4 consists of I8-2, L15-2, G14-2

Thank you for the opportunity to service the needs of your company. Please feel free to call me at (310) 989 - 4045 if I can be of further assistance to your company.

Sincerely,

Edgar P. Caballero
Laboratory Director
MAY/cb

Enclosures

This cover letter is an integral part of this analytical report.

Spike Recovery and RPD Summary Report

Method: 6010 (Lead)
Analyst: ER/OL
Data File: 5037-GC2

Date: 02/06/95
Sample ID: See Below
Matrix: Soil
Digestion Factor: 100/2

Sample ID	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPL DUP	% Dev	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
5698-003	mg/kg	10	10	103	ND	0.43	0.48	12	5.0	5.3	5.6	97	103	55 - 120	6	30	1.0
5698-013	mg/kg	10	11	111	ND	36	34	4	5.0	41	41	119	110	55 - 120	8	30	1.0
5698-020	mg/kg	10	10	100	ND	4.1	2.7	40	5.0	8.2	7.5	82	69	55 - 120	18	30	1.0
5698-026	mg/kg	10	10	103	ND	0.17	0.14	22	5.0	5.2	5.0	100	96	55 - 120	4	30	1.0

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 2/6/95

Advanced Technology Laboratories

Spike Recovery and RPD Summary Report

Method: 239.1
Analyst: KS/OL
Data File: 5039-1

Date: 02/08/95
Sample ID: 5702-021
Matrix: STLC Extract

ANALYTE	UNITS	LCS Conc	LCS Res	% Rec	METH BLANK	SPL CONC	SPK ADDED	MS RESULT	MSD RESULT	%MS REC	%MSD REC	% Rec Limit	RPD	RPD Limit	DLR
Lead	mg/L	5.0	4.8	96	ND	6.6	5.0	9.8	9.8	63	64	55 - 120	2	30	0.15

Approved by: Cheryl de los Reyes
Cheryl De Los Reyes
Inorganics Supervisor

Date: 2/9/95

Advanced Technology Laboratories

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14768
LONG BEACH, CALIFORNIA
(213) 433-6144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-0555 90708

TURNAROUND TIME: Priority TAT, Fax results ASAP

P/O

PROJECT NO. 400343

PROJECT NAME Atlas Radiator

SAMPLERS: (Signature)

SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	TYPE: LIQUID / SOLID	TYPE: GLASS / PLASTICS / BRASS / SS	ANALYSIS: FUEL HC 8015 - M / E	ANALYSIS: PETROLEUM HC 418.1	ANALYSIS: BTXE 8020	ANALYSIS: VOLATILE ORGANICS 624 / 8240	ANALYSIS: EXTRACTABLE ORGANICS 625 / 8270	ANALYSIS: CCR METALS TOTAL Pb only	OTHER	OTHER
C3 -2	2-3-95		composite into 1 sample and analyze	X	X								
H5 -2	"		"	"	"								
K11 -2	"		"	"	"								
E16 -2	"		"	"	"								
H2 -2	"		"	"	"								
K7 -2	"		same as above	"	"								
E9 -2	"		"	"	"								
J14 -2	"		"	"	"								
L2 -2	"		same as above, continued next page	"	"								
E3 -2	2-3-95		"	X	X								

TOTAL NUMBER OF CONTAINERS: 10

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	1430 2-3-95				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
METHOD OF SHIPMENT: Courier / walk-in		SHIPPED BY: (Signature)	COURIER: (Signature) C. Armano	RECEIVED FOR LAB BY: (Signature) [signature]	DATE/TIME 2-3-95 2:42pm

CHAIN OF CUSTODY

ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

P. O. BOX 14766
LONG BEACH, CALIFORNIA
(213) 433-5144 90803
FAX: (213) 433-6998

P. O. BOX 81904
FAIRBANKS, ALASKA
(907) 479-0555 99708

TURNAROUND TIME: Priority TAT, fax results ASAP

P/Q

PROJECT NO.	PROJECT NAME	SAMPLERS: (Signature)
100343	Atlas Aviation	[signature]

SPECIAL INSTRUCTIONS TO LABORATORY

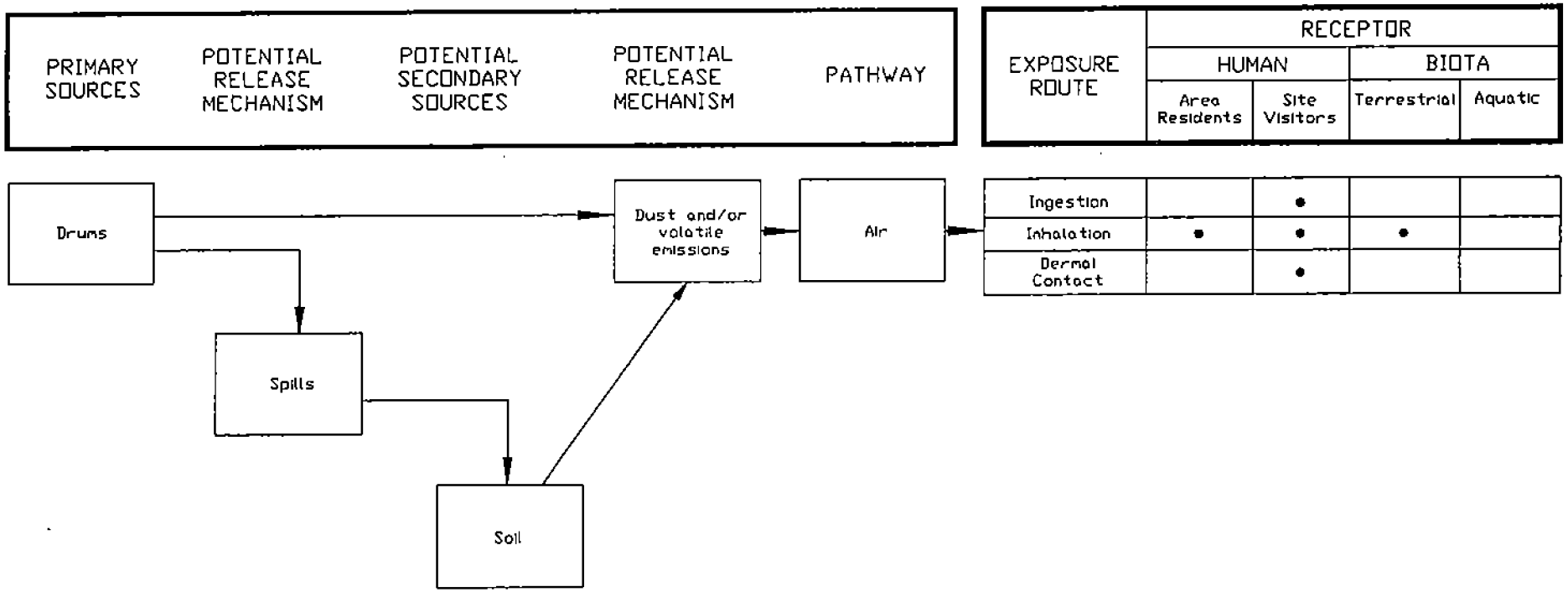
SAMPLE ID	DATE	TIME	SPECIAL INSTRUCTIONS TO LABORATORY	LIQUID / SOLID	GLASS / PLASTICS / BRASS / SS	FUEL HC 8015 - M / E	PETROLEUM HC 418.1	BTXE 8020	VOLATILE ORGANICS 624 / 8240	EXTRACTABLE ORGANICS 625 / 8270	CCR METALS TOTAL Pb only	OTHER	
C9 -2	2-3-95		continued from previous page	X	X								
I12 -2	↓			↓	↓								
J4 -2	↓		same as above	↓	↓								
D6 -2	↓			↓	↓								
G10 -2	↓			↓	↓								
D12 -2	↓			↓	↓								
F7 -2	↓			↓	↓								
I8 -2	↓		same as above	↓	↓								
L15 -2	↓			↓	↓								
G14 -2	2-3-95			X	X								

TOTAL NUMBER OF CONTAINERS: 10

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	1230 2-3-95				
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

METHOD OF SHIPMENT:	SHIPPED BY: (Signature)	COURIER: (Signature)	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
courier / walk-in		C. Armaño	[signature]	2-3-95/2:02 pm

APPENDIX E



ALASKA PETROLEUM ENVIRONMENTAL ENGINEERING

Alaska Office
P.O. Box 81904
Fairbanks, Alaska 99708
907-478-9555

California Office
P.O. Box 14758
Long Beach, California 90803
310-433-5144
Fax: 310-433-8998

LEGEND:

TITLE: DON MILLER – ATLAS RADIATOR COMPANY
10110 NORWALK BOULEVARD
SANTA FE SPRINGS, CA
POTENTIAL LEAD EXPOSURE PATHWAY
CONCEPTUAL SITE MODEL DIAGRAM

DWN:	DES.:	PROJECT NO.:
S.R.R.	S.R.R.	400343
CHKD:	APPD:	FIGURE NO.:
A.L.S.	A.L.S.	8
DATE:	REV.:	
4/95	0	

Table X

LEAD SCREENING PARAMETERS [1]						
Constituent	Concentration [2] (ug/g)	Airborne Dust (ug/m^3)	Plant Uptake (yes/no)	Exposure (dys/wk)	Skin Exposure (cm^2)	Soil Ingestion (mg/d)
Lead	340	1,000	No	5	5,800	240

[1] Addendum to Chapter 7 of DTSC Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities.

[2] Concentration taken is the highest lead composite concentration detected during all sampling events.

NOTE:

ug/g	= micrograms per gram
ug/m^3	= micrograms per cubic meter
dys/wk	= days per week
cm^2	= square centimeter
mg/d	= milligrams per day

Table XI
Lead Risk Assessment Spreadsheet
California Department of Toxic Substance Control

INPUT		OUTPUT							
MEDIUM	LEVEL		percentiles					PRG-99	PRG-95
			50th	90th	95th	98th	99th	(ug/g)	(ug/g)
LEAD IN AIR (ug/m^3)	0.15								
LEAD IN SOIL (ug/g)	340.0	BLOOD Pb, ADULT (ug/dl)	2.7	4.3	4.9	5.6	6.2	1077.4	1608.8
LEAD IN WATER (ug/l)	15	BLOOD Pb, CHILD (ug/dl)	5.3	8.4	9.5	11.0	12.1	183.4	387.0
PLANT UPTAKE? 1=YES 0=NO	0	BLOOD Pb, PICA CHILD (ug/dl)	22.9	36.0	40.8	47.2	51.9	18.9	39.8
RESPIRABLE DUST (ug/m^3)	1000	BLOOD Pb, INDUSTRIAL (ug/dl)	3.4	5.3	6.0	7.0	7.7	572.2	846.5

EXPOSURE PARAMETERS

	units	residential			industrial
		adults	children	children with pica	adults
General					
Days per week	days/wk	7	7	7	5
ermal Contact					
Skin area	cm^2	5700	2800	2800	5800
Soil adherence	mg/cm^2	0.5	0.5	0.5	0.5
Route-specific constant	(ug/dl)/(ug/day)	0.00011	0.00011	0.00011	0.00011
oil ingestion					
Soil ingestion	mg/day	25	55	790	240
Route-specific constant	(ug/dl)/(ug/day)	0.0176	0.0704	0.0704	0.0176
nhalation					
Breathing rate	m^3/day	20	10	10	20
Route-specific constant	(ug/dl)/(ug/day)	0.082	0.192	0.192	0.082
/ater ingestion					
Water ingestion	l/day	1.4	0.4	0.4	1.4
Route-specific constant	(ug/dl)/(ug/day)	0.04	0.16	0.16	0.04
Food ingestion					
Food ingestion	kg/day	2.2	1.3	1.3	2.2
Route-specific constant	(ug/dl)/(ug/day)	0.04	0.16	0.16	0.04
Dietary concentration	ug/kg	10.0	10.0	10.0	10.0
Lead in produce	ug/kg	10.0	10.0	10.0	

PATHWAYS, ADULTS

	Residential		Industrial		
Pathway	Blood Pb ug/dl	percent of total	Blood Pb ug/dl	percent of total	Concentration in medium
SOIL CONTACT:	0.07	2%	0.07	2%	340 ug/g
SOIL INGESTION:	0.15	5%	1.03	30%	340 ug/g
INHALATION:	0.80	29%	0.57	17%	0.49 ug/m^3
WATER INGESTION:	0.84	31%	0.84	25%	15 ug/l
FOOD INGESTION:	0.68	32%	0.68	26%	10.0 ug Pb/kg diet

PATHWAYS, CHILDREN

	Typical		with pica		
Pathway	Blood Pb ug/dl	percent of total	Blood Pb ug/dl	percent of total	concentration in medium
SOIL CONTACT:	0.05	1%	0.05	0%	340 ug/g
SOIL INGESTION:	1.32	25%	18.91	82%	340 ug/g
INHALATION:	0.94	18%	0.94	4%	0.49 ug/m^3
WATER INGESTION:	0.96	18%	0.96	4%	15 ug/l
FOOD INGESTION:	2.08	39%	2.08	9%	10.0 ug Pb/kg diet